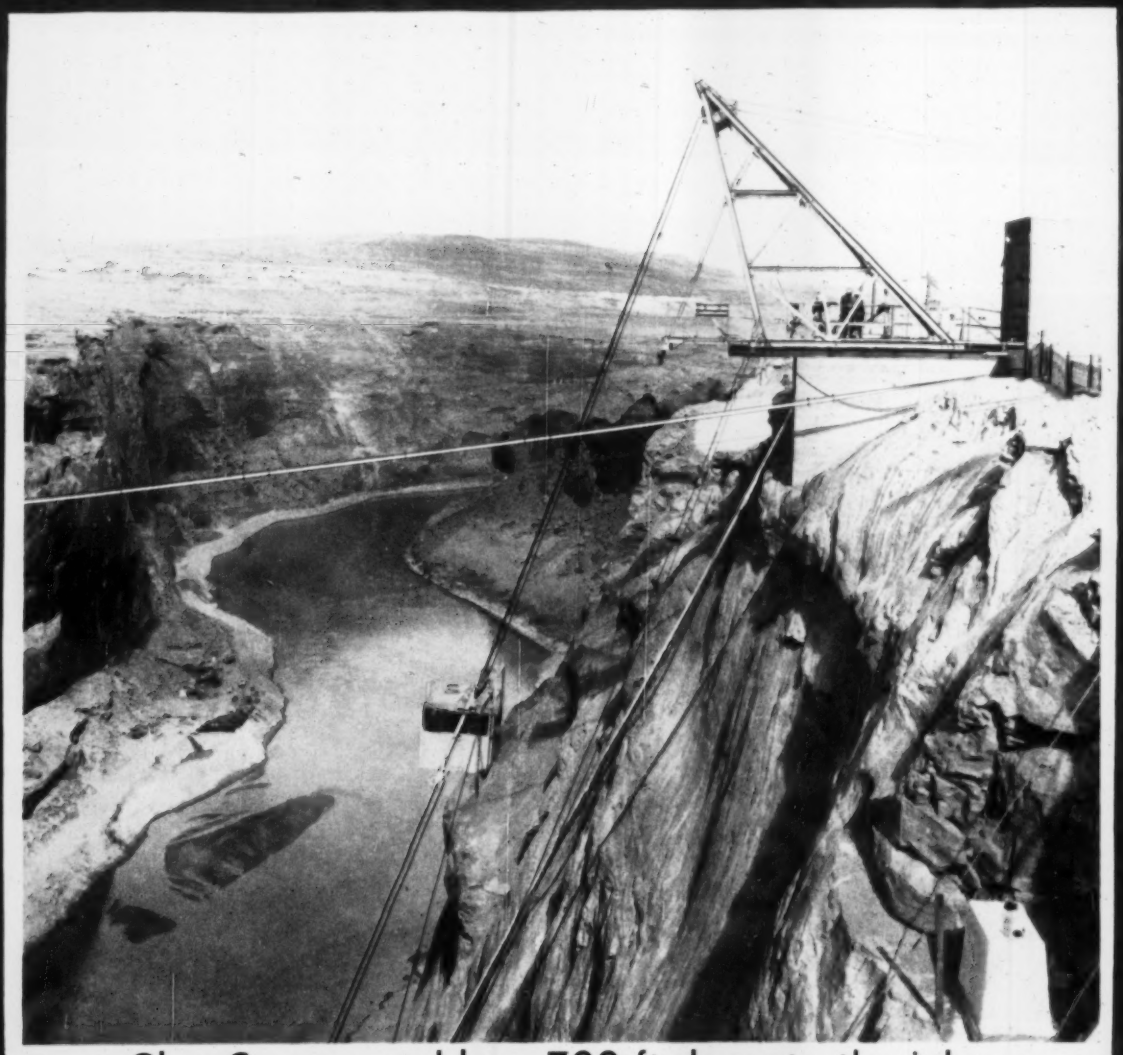
ENGINEERING NEWS-RECORD



Glen Canyon problem: 700 ft down to the job p. 28

A McGRAW-HILL PUBLICATION

E B POWER 48 1
UNIVERSITY MICROFILMS II
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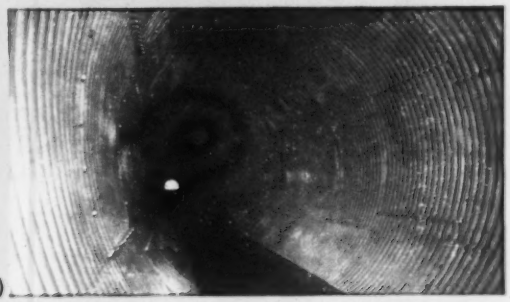
(A)



(B)

Extending from the bottom of this 40-foot fill is an Armco MULTI-PLATE® Pipe, 12 feet in diameter and 586 feet long. It is just east of the interchange for the junction of new U.S. Routes 25 and 40 in Ohio. Photo (A) is site at beginning of job; (B) interior of pipe, designed in 1 gage with a 5% ellipse.

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Interstate Highways Protected By

Durable Armco Corrugated Metal Drainage Structures

Under the Nation's most famous interstate highways you'll find many Armco Corrugated Metal Drainage Structures.

There is good reason. During the past half-century, Armco Drainage Structures have built a reputation for proved durability—in strength and material. Highway engineers specify them with confidence. Then too, contractors have found that Armco Pipe arrives on time, is easy to install, and helps speed up the job.

As a representative of the world's largest producer of corrugated metal drainage structures, one of the hundreds of Armco Sales Engineers can provide practical solutions to your drainage problems. Located near you, he can expedite delivery from one of the 55 plants; make gage and size recommendations; or give time-saving tips on installation.

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Corrugated metal drainage structures comprise just one group of the more than 30 Armco all-metal products for construction in highway, railway, municipal and industrial applications. Fill in and mail coupon for typical durability data. Armco Drainage & Metal Products, Inc., Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

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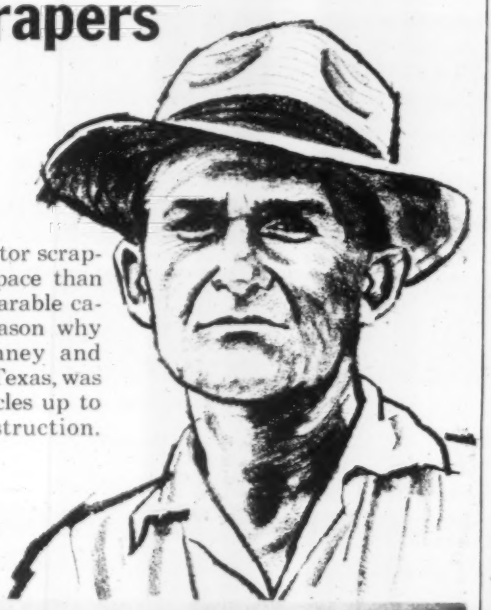
ARMCO®

Cuts cycle time 41% on watershed dams with Allis-Chalmers motor scrapers



Allis-Chalmers TS-260 motor scrapers turn around in less space than any other scraper of comparable capacity. That's one big reason why G. V. Walker of McKinney and Wheelock Co., Corsicana, Texas, was able to reduce hauling cycles up to 41 percent on dam construction. Here are the facts—

G. V. Walker, Supt.
McKinney and Wheelock Co.

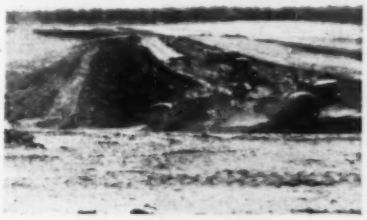
The TS-260 motor scraper handles 11 cu yd struck; 14 cu yd heaped. Its big 844-cu-in diesel engine develops 200 hp; 25,700 lb of rim pull —has plenty of reserve for all job conditions.

3 earthfill dams . . . 300,000 cu yd moved

Superintendent Walker reports a total of 300,000 cu yd of material moved on three recent Texas watershed dam jobs. On these operations there were three Allis-Chalmers TS-260 motor scrapers. The shorter turning radius of the TS-260's (full turns in 30 ft) allowed Walker to build the dams higher before the scrapers were forced to travel the full length of the dam to turn around.

Saves 42 miles of extra travel

On Project 26, for example, Walker's TS-260's were able to carry 162 more short-haul loads because they continued to make full turns after the dam became too narrow for other scrapers to turn. When the dam reached that critical height, other scrapers required a total haul-return distance of 550,800 ft. The distance traveled by the TS-260's totaled only 324,000 ft . . . saving 226,800 ft or 42 travel miles.



Loaded TS-260 powers its way upgrade to the rising dam.

Besides TS-260 turn-ability, Walker likes the positive, hydraulic, double-action bowl jacks that permit down pressure for fast penetration of hard material. The curved cutting edge breaks up sandy Texas clay, "boils" it into the bowl. Material loads easier and fills every corner for maximum yardage each trip. Positive forced ejection makes fast and accurate spreading.

All in all, G. V. Walker sees his Allis-Chalmers dirt-moving fleet as a real money-maker and work-saver. See for yourself by asking your Allis-Chalmers construction machinery dealer for an on-the-job demonstration. Allis-Chalmers, Construction Machinery Division, Milwaukee 1, Wisconsin.

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Screw Anchors were originally designed and developed by Richmond Screw Anchor Company many years ago. They are drawn and fabricated to Richmond specifications to do a sure, non-slip anchorage job in concrete. There are similar products on the market but you will always be safe with Richmond Screw Anchors and Anchor Bolts because of their greater, tested strength. The Richmond Anchor, with greater diameter for anchorage, weighs more and has more holding power where it counts the most.

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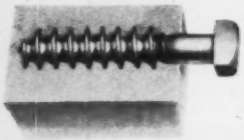

Richmond Screw Anchor and Bolt assembly in concrete.

Richmond Anchor Eye Bolt

SIZE (Dia.)	Approx. Ultimate Strength	
	Tension	Shear
⅜"	4,020 lb.	3,015 lb.
½"	8,442 lb.	6,332 lb.
⅝"	12,395 lb.	9,296 lb.
¾"	18,291 lb.	13,718 lb.
⅞"	26,331 lb.	19,748 lb.
1"	34,505 lb.	25,879 lb.
1¼"	51,590 lb.	38,693 lb.
1½"	80,802 lb.	60,602 lb.

The Richmond Screw Anchor and Bolt Assembly provide for permanent or temporary, cast in place anchorage to concrete. For more information about their varied application in concrete construction and strength data send for your copies of the Richmond Data Book on Lifting Inserts and the current Richmond Handbook, which shows the more than 400 Richmond-engineered Tying Devices, Anchorages and Accessories—Write to:

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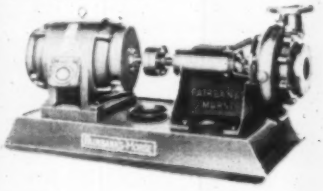
vegetables, etc.



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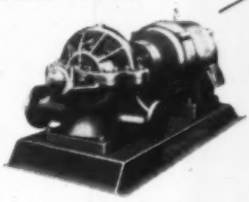

Up to 50,000 gpm., pressures to 700 ft. Sizes 1½″ through 36″. Single stage or multistage.

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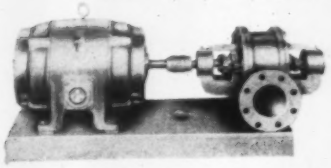

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chemicals
refrigerants, etc.

Up to 200 gpm., pressures to 900 ft. High pressure at normal operating speeds. Handle widely varying heads with little change in capacity. Sizes 1¼″ through 2½″.

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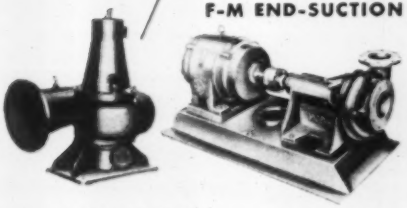

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chemicals
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cooling towers
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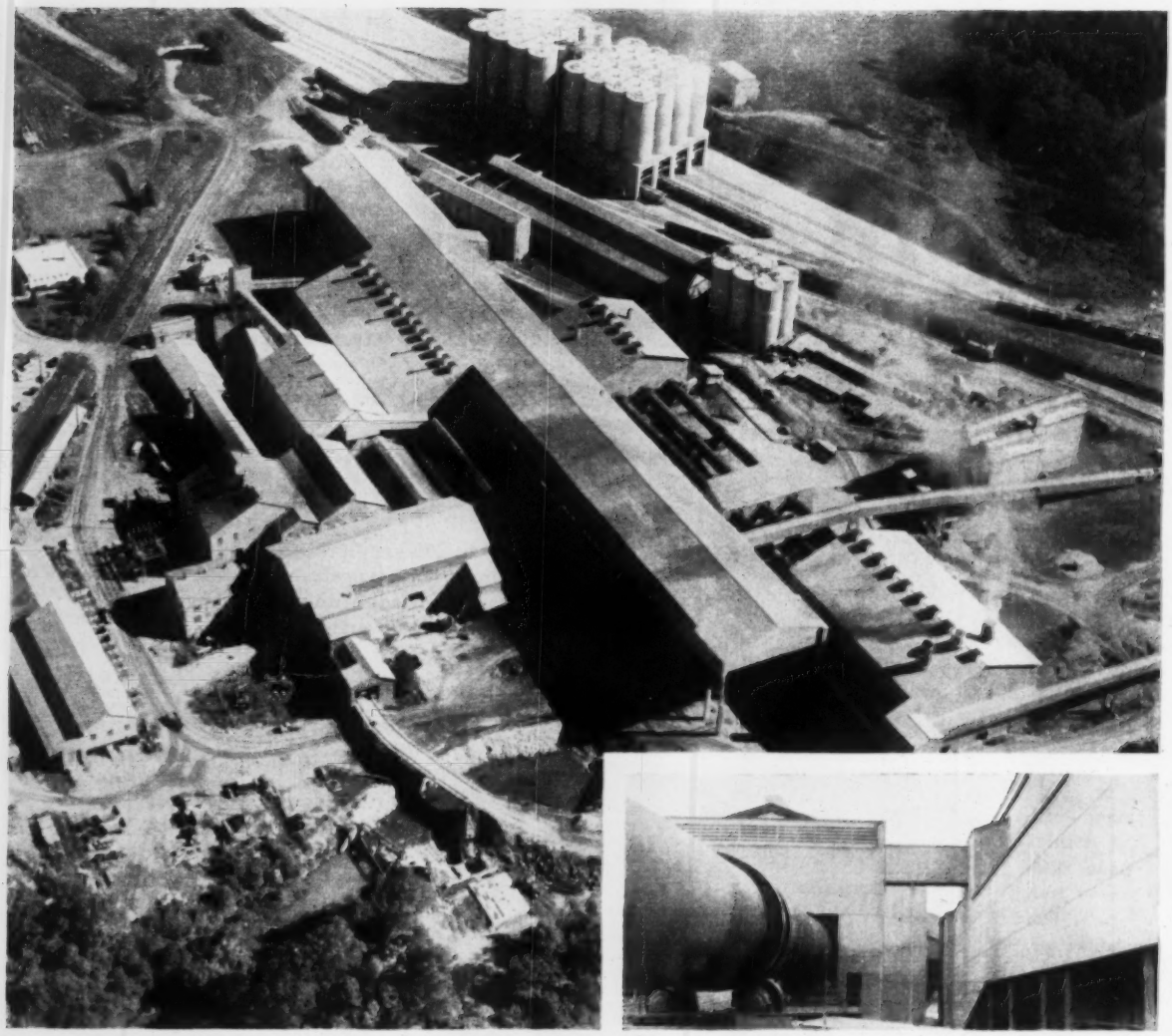

100 acres of "K&M" Heavyweight Corrugated Asbestos went into the expansion of the Union Bridge, Md. plant of Lehigh Portland Cement Co., Allentown, Pa. Pipe-like objects at top center are kilns with a 3,000,000 barrel annual capacity.

This siding and roofing will stand up where other building materials would fail! "K&M" Heavyweight Corrugated Asbestos was used along the entire length of this 900' building—designed for raw material storage.

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You can give your clients the same durability and freedom from maintenance that Lehigh Portland Cement Co. enjoys. "K&M" Corrugated Asbestos fits 101 industrial applications, new construction as well as plant expansion. Its initial cost is low. It goes up fast with ordinary tools. In quality, it's typical of the many fine building products produced by "K&M".

Write to us today for more information about "K&M" Corrugated Asbestos or any other "K&M" asbestos-cement product in which you are interested.

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B.F.Goodrich tires give up to 50% more service, contractor reports

F. R. HEWETT CO., general contractor of Spokane, Washington, operates 147 pieces of equipment on jobs throughout the Pacific Northwest. Here the job is the Spokane Valley Freeway. "We switched to B.F.Goodrich FLEX-RITE NYLON Rock Logger tires 3 years ago," writes Truck Supt. Richard M. Ward. "They have given us up to 50% more service than the tires we used previously—and we have been able to retread them too!" Today Hewett uses B.F.Goodrich tires 100%.

Reports like this come in from contractors all over the country. They find B.F.Goodrich off-the-road tires give them longer, trouble-free service, thanks in part to FLEX-RITE NYLON cord construction. FLEX-RITE NYLON withstands double the impact of ordinary cord materials, resists heat blowouts and flex breaks. Result: the FLEX-RITE NYLON cord body outwears even extra-thick B.F.Goodrich treads —can be retreaded over and over.

Follow the lead of contractors like Hewett, who reports B.F.Goodrich tires give "very low cost per hour." See your B.F.Goodrich dealer today. He's listed under Tires in the Yellow Pages of your phone book. And ask about the new Rock Service Tubeless or conventional tire that prevents unnecessary tire failures! *B.F.Goodrich Tire Co., A Division of The B.F.Goodrich Co., Akron 18, Ohio.*

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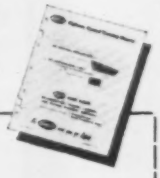

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Is the Road Program Adequate?

Here are some more letters commenting on Robinson Newcomb's article outlining our highway needs

SIR—I have read with real interest Robinson Newcomb's article (ENR June 19, p. 38). Certainly I find myself in agreement with the approach that Mr. Newcomb uses, particularly in relating the importance of the highway program directly to our total economy. It is a very timely and worthwhile article.

G. DONALD KENNEDY
President
Portland Cement Association
Chicago, Ill.

▶I found Mr. Newcomb's article to be most interesting and one which I trust will be widely read and discussed throughout our industry. It is particularly gratifying to see our highway needs approached in a businesslike manner giving consideration to the end results our economy would enjoy if proper highways anticipated demands, rather than following many years behind. The article appears to me to answer the riddle of which comes first—"the chicken or the egg"?—as regards our highway program and the national economy.

NELLO L. TEER, JR.
Nello L. Teer Company
Durham, N. C.

▶I was very much impressed by the unusual and original approach and the economic logic on which it is based.

The scope of the article is tremendous, and it requires concentrated study to digest. It should be placed in the hands of all government officials who have anything to do with national highway planning.

M. B. GARBER
The Thew Shovel Company
Lorain, Ohio

▶It is enlightening and provocative of thought. Let's hope that greater support by the Congress and the state legislatures will expedite the modernization of our national highways and roads at both state and local level. In addition to the gains resulting from more efficient transportation of people and goods, the savings will be great if completion comes before prices increase greatly.

FREDERIC M. WAID
Washington, D. C.

Engineering News-Record welcomes expression of opinions from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance. Letters should be addressed Editor, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

Elaboration Needed?

▶Mr. Newcomb's article was helpful. However, we believe that he could have expanded his views where he indicated in only two or three sentences the tremendous differences between urban and rural needs.

In our opinion he has not underestimated the total cost of highways needed in the nation, based on studies which have been made for the City of Philadelphia. We would like to point out, however, unless parallel improvements are made in high speed mass transit facilities in the major metropolitan areas, it will be physically impossible to build all the highways which would be needed. We just cannot depend on rubber tired vehicles.

We believe that a balance between highway and rail transit facilities will prove to be the most economical in view of the apparent unwillingness of our people to pay for governmental transportation services.

JOHN A. BAILEY
Deputy Managing Director
City of Philadelphia
Philadelphia, Pa.

For Capitol Changes

SIR—Your editorial, "Capitol Deception," (ENR April 24, p. 136) creates the impression that the American Institute of Architects has taken a stand against the proposed reconstruction of the east front of the U.S. Capitol without proper consideration, evaluation and resolution.

That the reconstruction was proposed in 1863 by the then Architect of the Capitol does not result in a conclusion that it should be done. Many things are proposed; but few are authorized.

It would seem that the resolution of the AIA in convention assembled should represent the opinion of the majority of the society, even though the membership is divided (a healthy condition).

Your analysis of the cost per sq ft basis is meaningless, in that the intent is to move the wall 32½ ft rather than 100 ft. The cost analysis must be on the basis of the area actually involved, since the resulting unit cost should have a heavy bearing on the authorization to proceed. Under your analysis, it would be better to move the wall 100 ft to cut down the cost per sq. ft, regardless of the need or appearance of the result.

The title of "Architect of the Capitol," under which J. George Stewart holds office, should have some meaning rather than pure title. State and national registration laws for architects and engineers have been set up and each profession readily agrees that the registrations are not interchangeable. This does not mean that Mr. Stewart is not qualified. But it results in the same situation we have here in Michigan, where we have a Highway Commissioner who is not a registered engineer, while the office is designated as requiring engineering qualifications.

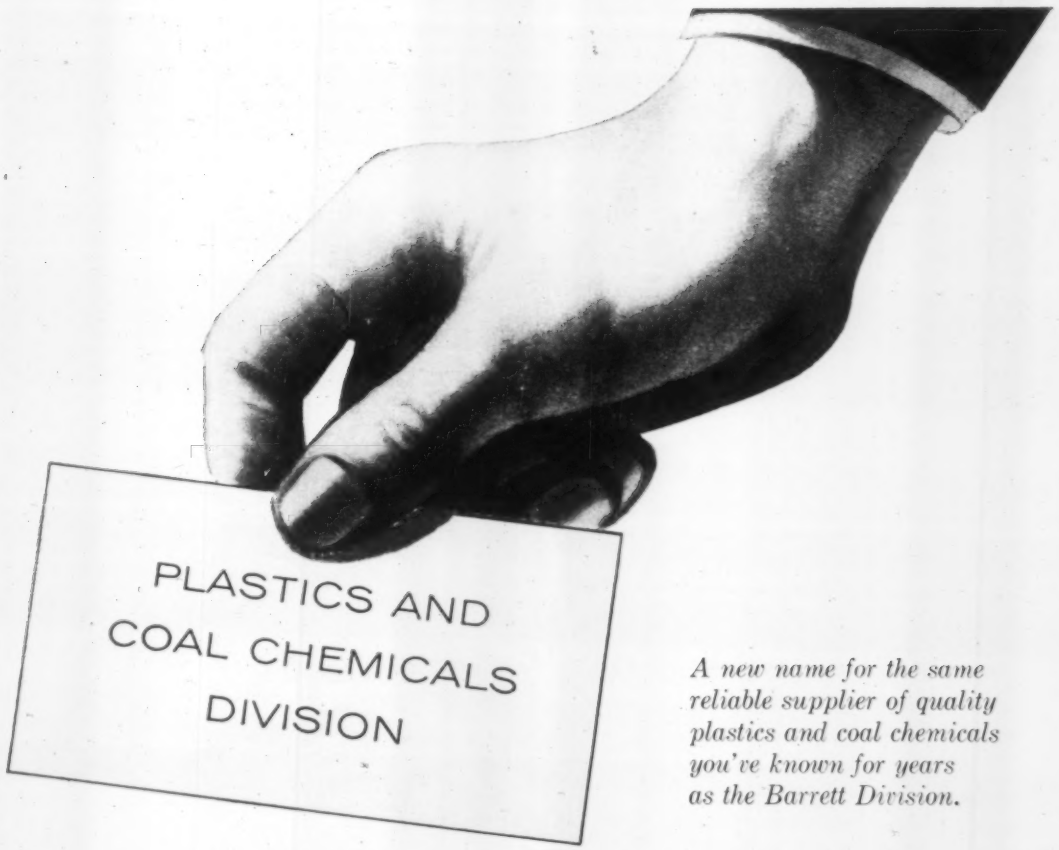
Mr. Mackie, the commissioner, is doing an excellent job, probably far superior to anything that has been done in the last several years on state highway work. But if registration is to mean anything, why should our State Highway Commissioner's post and that of the Architect of the Capitol be filled by professional men "out of character." If continued, this would tend to develop a possibility of an alien President of the United States, as well as influencing young and old architects and engineers to forego the pursuit of actually being registered.

Your closing statement that the "opposition is based on false premises" recognizes only the feasibility of the reconstruction as an engineering project, rather than an architectural improvement with which all of the people should be greatly concerned.

HAROLD BROOCK
Swanson Associates, Inc.
Bloomfield Hills, Mich.

What Made U.S. Great

SIR—We note in the editorial, "'Multipurpose' Tent Expands" (ENR July 10, p. 132) the opening statement: "Even unreconstructed critics of 'pork barrel' bills will have to admit that this year's rivers and harbors bill contains some easily digestible meat." While we know that no derision was intended by you



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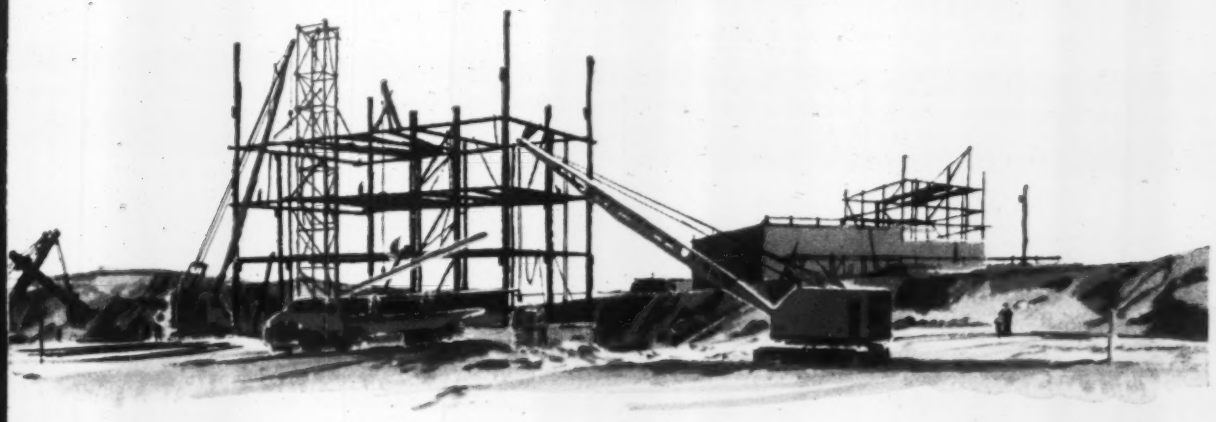

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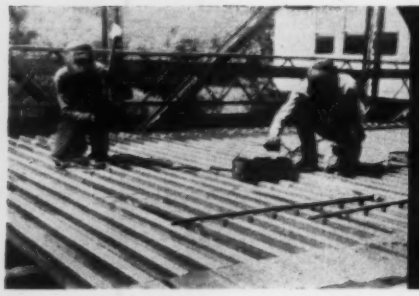

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. . . Reader Comment

here are some facts that these unreconstructed critics do not consider:

Expenditures for waterway improvements are subjected to closer scrutiny than any other federal expenditure. Therefore, labeling waterway legislation "pork barrel," which implies political trades and maneuvers for ill conceived and unworthy projects, is not warranted. The derisive term is a mouldy cliche, used largely through habit; it misleads the people.

Approved projects have been certified economically sound only after public hearings and long study by the Corps of Engineers, made successively by the district engineer, the division engineer, by the Board of Engineers for Rivers and Harbors, and, finally, by the Chief of Engineers.

Critical users of the term "pork barrel" rarely mention that piers, wharves, elevators, warehouses, trackage and other necessary facilities, which are wholly the work of local authorities or private interests, are useless without the waterway. And while they deride the waterway as "pork barrel," the land structures it serves are often commended as civic advances.

The great strength of America today owes largely to harbor and channel development done in the past. The greater strength of the future will come largely from continuing development. Money spent for this purpose is an investment in the building of the nation.

GEORGE H. PALMER
Publisher, Marine News
New York, N. Y.

•

Salaries for Engineers

SIR—Your editorial on "Shortsightedness on Salaries" (ENR July 3, p. 100) is indeed a breath of fresh air.

Certainly the needs of our society are suffering when unfilled positions exist due to low salary scales for engineers. If America is to continue to prosper, the role of the engineer must be recognized as a vital factor by the public, with appropriate pay scales in accord with the difficulty and scope of the work.

Continued publicity, education, and emphasis on engineering salaries is a must today. ENR, as is often the case, leads the way in bringing this situation before the public.

Walter D. Linzing
Harza Engineering Co.
Chicago, Ill.

CALENDAR

Hydraulics Division, American Society of Civil Engineers, 7th national conference, Georgia Institute of Technology, Atlanta, Ga., August 20-22.

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Take, for example, this Chetwynd Apartments project.

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The builders told us about "the remarkable ease of installation" of Insulrock. That's one reason why they have continued to use Insulrock for their succeeding building.

You ought to find out *all* the reasons why Insulrock is indicated for profitable jobs.

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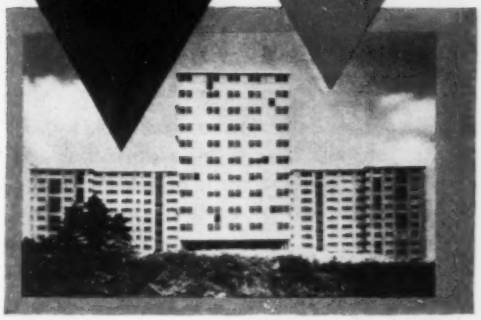
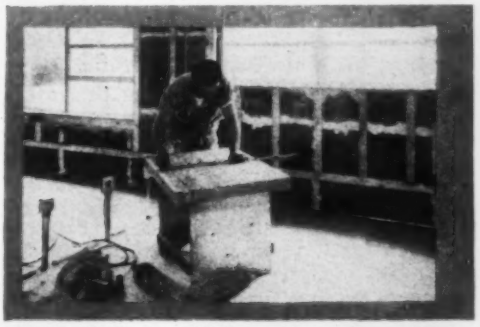


Chetwynd Apartments, Rosemont Construction Company, Bryn Mawr, Pa., Builders and Owners



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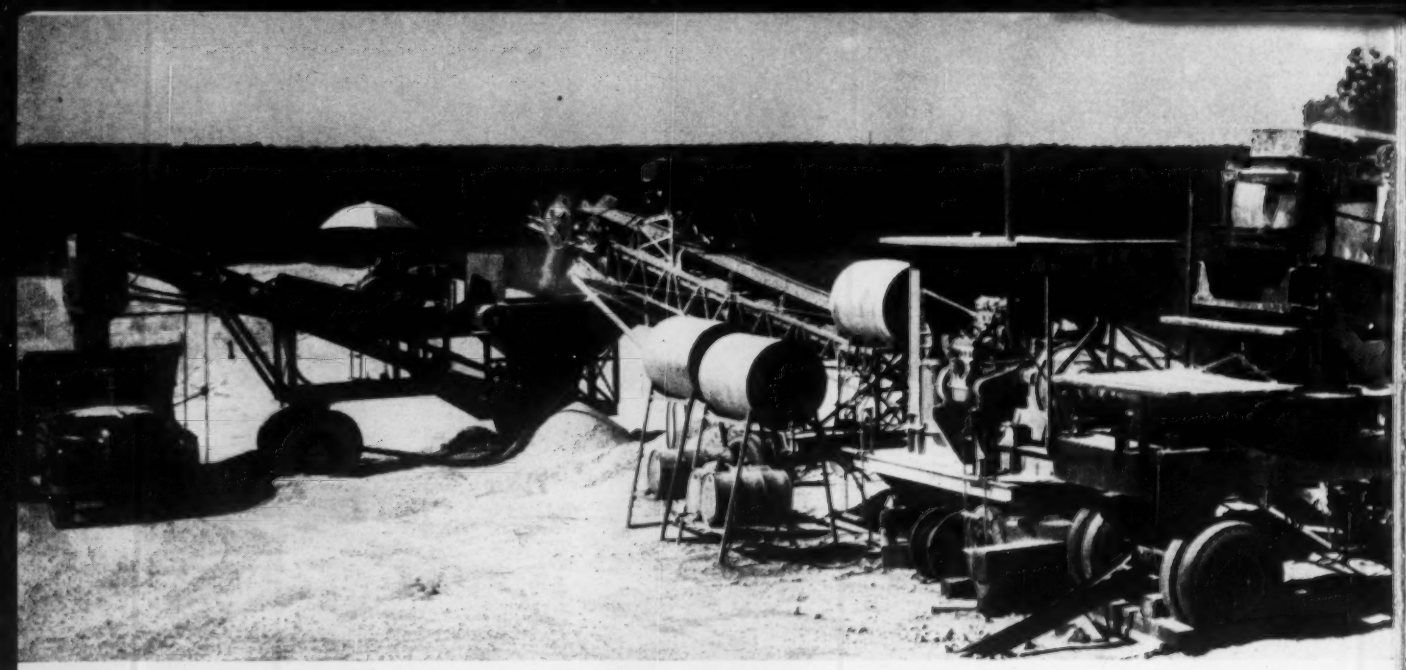


On this portable crushing operation, producing materials for use on a grading and drainage contract for the Missouri Freeway construction project near Joplin, Mo., the W. J. Menefee Construction Co. uses 3 Cat Engines to power this crusher.

He staked his (business) life

This big 100% Cat fleet owner says: "The *dependability* of engine power by Caterpillar has always made it possible to anticipate *true* costs—takes the guesswork out of bidding."

From a modest beginning as a small contractor, the highly successful W. J. Menefee Construction Company of Sedalia, Mo., has bet its business life on Caterpillar Engines and machines across the board.

"Experience has shown us that we can always rely on Cat Engine power," says Mr. E. W. Menefee, president.

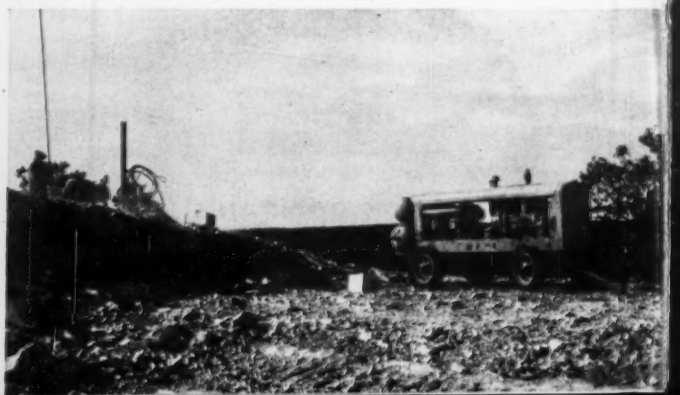
Recently this big spread was responsible for 9 miles of grading and drainage, including the interchange, to join the Missouri Freeway with Oklahoma's Northeastern Turnpike. Besides a variety of modern, heavy-duty Cat Engines to power crusher, shovels and compressors, Menefee is getting this big, tough job done on time with a large fleet of Caterpillar equipment, including DW21s and DW-10s, D9s and D8s (with No. 28 Rippers) and No. 12 Motor Graders.

This contractor's policy of always specifying Cat Engine power and machines—coupled with sound management practices—has paid off in profits. Like other successful contractors, this spread gains solid advantages by relying all the way on Cat equipment. Its reputation and preference by contractors mean pride of ownership, high trade-ins, and an organization that stands behind the product.

Reliably rated Cat Diesel Engines and Electric Sets give more work for each dollar spent for purchase, repairs and operation. Production is maintained at an even level because there is no appreciable letdown in power as equipment ages.

Cat DW21 Wheel Tractors pushloaded by a big D9 work in tough chert conglomerate on Menefee's Freeway job.

Cat Diesel drives a pneumatic compressor drilling blast holes in rock quarry for materials used on the Freeway job.



on Caterpillar

Cat Engines mean minimum down time, permitting closer bidding of every job, and their well-known durability can handle the harsh materials and severe job conditions the contractor faces. All of these factors result in lower operating costs than other diesel power plants; and the market value of Cat equipment stays high after normal amortization.

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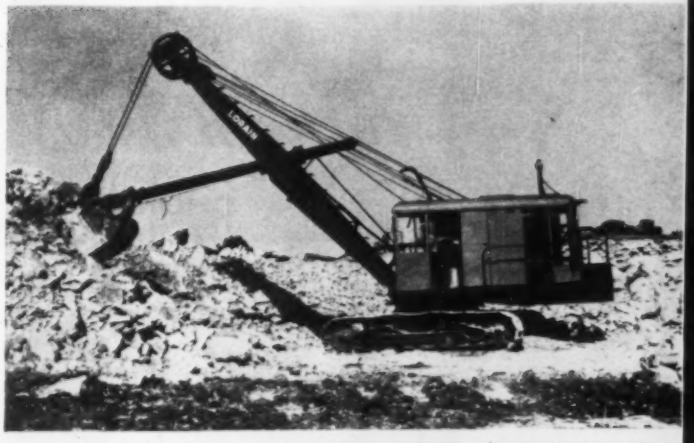

A Cat D337 Engine powers this Lorain shovel feeding rock to Pioneer portable crushing plant — part of the W. J. Menefee Construction Company's big Missouri Freeway linkage project.

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—E. W. Menefee, president

Engine Division **Dept. EN7**
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ENGINEERING NEWS-RECORD

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THE CONSTRUCTION WEEK

EARNINGS: KEY TO STEEL PRICES—August should tell the story on higher steel prices. The amount and time will depend on what the steel companies' July earnings reports show. It's the first month to reflect the wage hike given steel workers July 1. Outlook: A hike of $5 to $8 a ton.

HARNESSING NATURE'S STEAM—Pacific Gas & Electric Co. says it will build the first geothermal plant in the U.S. for commercial production of electric power. The $2 million plant, with initial capacity of 12,500 kw, will use the natural steam of geysers to drive its turbines. PG&E plans to use 265,000 lb per hour of steam at 100 psi and 348 F. The plant will be located near Healdsburg, Calif., north of San Francisco. Geothermal plants are in operation or under construction in Italy, New Zealand and Mexico. Drilling of prospective sites is under way in Iceland, Fiji Islands and El Salvador.

NO POLITICS HERE, PLEASE—Wyoming's Highway Commission has banned political posters on highway rights-of-way during the 1958 campaign. Reason: They're a hazard, says the commission.

MODERNIZING CODES—A new survey shows a continuing trend to revise municipal codes to permit thin curtain walls in multistory buildings. Of 100 cities surveyed, 49 now allow thin walls without fire-resistant backup; 12 are considering favorable changes; and 17 are in the process of adopting the change in new model codes. The other 22 cities require masonry materials or one to four-hour fire resistance, regardless of distance to nearby structures. The survey was made by the American Iron and Steel Institute.

CHANGING TIMES—Copper plumbing and drainage systems now can be installed in homes at less cost than systems of steel and cast iron. So says the Copper and Brass Research Association and Chase Brass & Copper Co., Waterbury, Conn., following completion of two independent cost surveys.

BETTER BUY NOW—Orders for fabricated structural steel were higher in June than in any month since May 1957, American Institute of Steel Construction reports. It was the seventh consecutive monthly rise.

STILL TALKING—Negotiators were far apart last week in contract talks between United Auto Workers and three equipment manufacturers—Caterpiller Tractor Co., International Harvester Co. and Deere & Co. Existing contracts expire this week. Strike possibilities seem slim, despite strike votes. Union demands stress profit sharing, productivity increases, higher supplemental unemployment benefits and improved pensions and job security.

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Murphy Construction, Palm Beach

New York Thruway Connecting Link
Carlo Bianchi & Co. Inc., Framingham

Jersey City Sewage Treatment Plant
Garden State Constructors & Assoc.

Brazos River Bridge, Hearne, Tex.
J. A. Raines Construction Co., Okla.

Mississippi River Bridge, Lansing, Ia.
Brennan Brothers, LaCrosse, Wis.

Connecticut Turnpike Feeder
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WASHINGTON OBSERVER

- **Materials prices to tighten**
- **Frying Pan-Arkansas bill moves**
- **Great Lakes water diversion argued**
- **Highway needs estimates okayed**

● **Washington officials are keeping a sharp lookout for signs of price increases in construction materials.**

One school of thought sees a picture that seems to guarantee rises for certain basic building materials, steel, copper, and aluminum, particularly. Their basic worry is the prospect of a new round of inflation—a renewal of the post-war boom that would push all prices generally higher. They see steel and aluminum going up because of wage increases not yet covered by price increases. Copper prices will firm when Congress approves a huge price-stabilizing government purchase plan, as now seems almost certain.

Behind this fear of inflation is the feeling that the business turn will come quicker and sharper than many believed even 30 days ago.

Officials know that in addition to some upward pressures on the price level, inventories are getting lower too. When the turn-around comes, they say we'll have another inflation threat to cope with.

● **Prospects for the Frying Pan-Arkansas project are better—but not sure.** After years of trying, western congressmen have won House committee approval of the $160 million proposal to divert water from the western slope of the Colorado River Basin to the eastern slope. The project would be for irrigation, and hydroelectric projects. It would include seven power dams with a total of 104,800 kw capacity. The Senate has passed the bill three times, but House opponents have been successful in bottling up the authorization.

The threat of a pigeon-holing still exists. The House Interior Committee approved the measure by a 19 to 4 vote; but the House Rules Committee is dominated by opponents and may not clear the legislation for House action before Congress adjourns in August.

● **Senators from Michigan and Wisconsin are fighting proposals to experiment with the flow of Great Lakes water through the Chicago drainage canal to the Mississippi.**

Legislation backed by Indiana and Illinois supporters would make a three year test of increased diversion through the canal—to aid navigation —without materially affecting the water level of the Great Lakes. Opponents claim lowering the lake level even one inch would be disastrous to shipping, hydro-power and relations with Canada.

● **Legislation affecting future federal highway apportionments is moving in Congress.** The House Public Works Committee has approved the bill by Rep. George Fallon (D.-Md.) that would authorize interstate system allocations for fiscal 1961 and 1962 on the basis of cost estimates used in making the 1960 allocations (see page 26). **The key point** involves accepting estimates needed to complete interstate mileage at a uniform rate in all states. Action by the House of Representatives is almost certain; and backers now say the Senate will probably go along.

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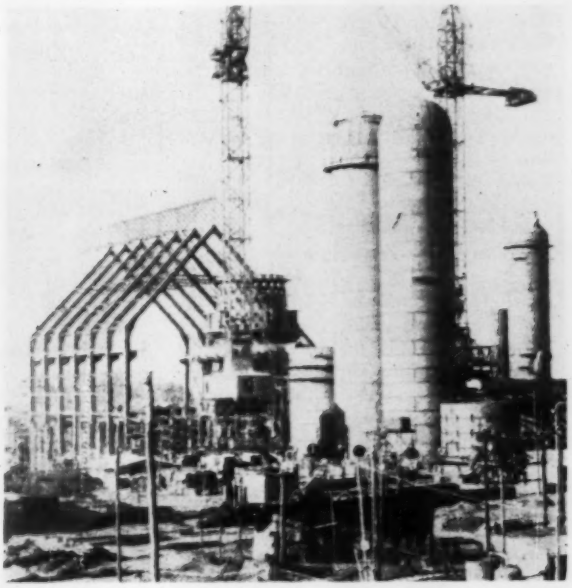
AMERICAN AID to foreign countries, for projects like this bridge in Iraq, adds up to some $60 billion.



SOVIET AID, for works like this steel mill in India, is fairly new. Total: $1.9 billion. Yet Russia leads in the cold war.

Foreign Aid: New Look Needed?

The Middle East crisis has raised some basic questions in Washington about the effectiveness of economic aid, the principal tool of U.S. foreign policy in underdeveloped nations.

This week the Senate is considering the Administration's foreign aid bill, which was badly cut in the House. The crisis will undoubtedly help in the fight to restore some of the cuts. But the questions will remain to trouble future debate over foreign aid policies.

Any major changes in these policies would directly affect the fortunes of the U.S. construction industry, since construction plays a major role in our aid programs.

U.S. foreign aid totals 30 times the size of the Soviet bloc's aid. Yet the Russians seem to be coming out ahead in the Mideast. That fact raises these fundamental questions:

- **Is the relatively thin Soviet program paying off more politically than our big effort? If so, why?**
- **Does economic development really promote political stability and peaceful evolution in underdeveloped nations?**

The answers aren't easy. But the construction man's stake in them is huge. Engineers from Western countries and the Soviet bloc are among the advance guard in the cold war, in Africa, the Middle East and Asia. Past and future construction contracts run into the billions.

1. What U.S. Aid Has Done

It's hard to make an exact estimate of the relative size of construction activities by either side. The Western effort is difficult to measure because it is so large and has been going on so long. The Soviet effort is tough to define because it's only a few years old.

But these facts and figures give a good idea of the size of the U.S. construction industry's stake in foreign aid:

- **The U.S. aid program, including the military, totals billions for overseas construction** since the start of the Marshall Plan. Actual construction figures for Marshall Plan aid—mostly to Europe—are not available since contracts were let by the foreign governments. But under the later Mutual Security program, 135 construction contracts valued at $111 million had been completed as of June 30. Seven contracts totaling $120 million were still out. And 69 engineering contracts with a value of $55 million had been let.

Here are some Mutual Security projects, completed or under way, in Mideast, Asian and African countries:

The Hwachon Dam and 81,000 kw power plant in Korea, which cost $9 million; the Sariyar hydroelectric power project in Turkey, $10 million; 17,000 miles of roads and bridges in Turkey; two big cement plants and a fertilizer plant in Taiwan; two major highways in Vietnam, at a cost of $30 million so far.

Also, a railway improvement survey in India; engineering surveys for the projected Shimen Dam in Taiwan; an international airport in Afghanistan, $8 million; and a power and irrigation survey of the Ethiopian Blue Nile, which could lead to major construction projects.

- **The new Development Loan Fund—a semi-autonomous agency under the State Department, which makes loans to private industries abroad—has these construction projects on its books:**

In India, a $75 million railway and road development program; $5 million for highways in Honduras; $15 million for roads, power and public works in Israel; $1.6 million for irrigation and land development work in Ceylon; $5.5 million for water supply and sewage disposal in Pakistan; $6.4 million for railways and cement plants in Taiwan; $12 million for fertilizer plants in Greece; $900,000 for highways in Ceylon.

- **The Export-Import Bank has on its books loans totaling about $1 billion**

for projects involving construction. About $350 million of that is in Africa, Asia and the Middle East.

• **The International Bank for Reconstruction and Development (World Bank) has loaned roughly $2.8 billion** for construction around the world. The U.S. is the largest stockholder.

In the Middle East, the World Bank made construction loans of: $12.8 million to Iraq; $27 million for the Litani River power and irrigation project in Lebanon; about $22 million for Iran; $60.8 million to Pakistan for ports, power, pipelines, paper and pulp plants; $45.4 million for grain storage, port development and the Seyhan Dam in Turkey.

Biggest World Bank construction loans are for the $80 million Kariba Gorge hydro project in the federation of the Rhodesias and Nyasaland; $107.5 million for expansion of the Tata Steel Works in India; and $66 million for the Yanhee power and irrigation project in Thailand.

Not all of that money went directly for construction; some of it was for auxiliary facilities. American engineering and construction firms received an important share, but not all of it by any means.

2. What Soviet Aid Has Done

The Soviets got into the act only a few years ago. But they have undertaken a significant number of major construction projects. Here are a few important examples:

• **India is the largest single recipient** of aid from the Soviet bloc. It has received about $300 million worth of credits for the purchase of goods and services—over $250 million came from Russia. Of the total, $132.3 million is for equipment, materials and services for the one million ton capacity steel mill at Bhilai. The rest is earmarked for industrial use and mineral resource development.

• **Egypt received a $178 million, 12-year loan** at 2½% for economic development from the U.S.S.R. This will cover about half the cost of the whole Egyptian development program—excluding the Aswan Dam. Most of the money is earmarked for industrial plants and equipment.

Egypt also received $56 million of development credits from Czechoslovakia. Hungry and East Germany have made small contributions.

• **Syria has received $194 million** in economic development credits—$170 million from Russia. That will pay for about one-third of the Syrian development program. Among the construction projects are: hydroelectric and irrigation projects, a railroad, bridges, thermal power stations and other industrial projects.

Czechoslovakia and East Germany are under contract with Syria to build four cement plants, a $15 million refinery and grain elevators. The Red bloc also is undertaking extensive military airport and naval base construction in Syria.

• **Yemen has received $16 million** in credits from the Soviet Union and $16 million from Red China for expansion of port facilities at Salif, and for highway, airport and communications projects. Moscow has offered another $25 million for roads, harbors, dams and other public works.

• **In Iran, plans for joint Iranian-Soviet river development** are under consideration. Iran has not accepted tempting offers of Soviet financial help.

• **Burma has received about $54 million** in credits from the Soviet Union and Red China, plus offers of numerous "gift" projects. Most projects are public buildings. Two irrigation projects are under way.

• **Cambodia has accepted a $22.4 million grant** from Red China for roads, irrigation, bridges, power and public buildings.

• **Indonesia received $109 million** in credits from the bloc—$100 million of it from Russia. Most of this is earmarked for industrial use.

• **Ceylon has accepted a sugar mill** on credit from Czechoslovakia.

The Reds also have made tempting, and often vague, offers to other countries, including the Sudan, Libya, Liberia, Tunisia and Ethiopia.

3. Comparing the Programs

The U. S. program is much bigger than the Soviet's. Our foreign aid—of all kinds, not just construction—totals more than $60 billion. Soviet bloc aid since its start in 1954 totals only $1.9 billion in credits.

American aid has leaned heavily toward grants—about $50 billion. However, in recent years the trend has been toward loans, except for military aid. In the Soviet bloc, only Red China has given grants of any importance—$55 million.

• **Red advantages**—U. S. aid tends to be spread out over many countries. Soviet aid is concentrated in countries where Moscow hopes to reap quick political benefits. Most of these nations are neutralist, with some leaning to Moscow. Over 95% of Soviet aid has gone to Yugoslavia, India, Afghanistan, Egypt, Syria and Indonesia. U. S. aid to those countries has been far less. In Egypt and Syria, the Soviets have a virtual monopoly.

Russia concentrates its aid on capital goods, which is popular in underdeveloped countries trying to industrialize. Our aid is apt to be less conspicuous: longer term hydro and irrigation projects, highway improvements, surplus foods, consumer goods, budget support.

Moscow makes sure its projects are well known, publicizing each step of the negotiations as though it were a new grant.

The Reds also can act faster and with less red tape, because of their smaller program and authoritarian form of government.

More important, the Soviet bloc can offer major markets for the raw materials produced by underdeveloped countries. In many cases, these products are in surplus in the West—and marketed by Western firms in competition with underdeveloped countries.

Then there's the problem of neutralism. Most of the weak and newly independent nations want to stay neutral. Moscow has actively supported those desires. The U. S. has been more anxious to enlist the underdeveloped nations as military allies. And we've discriminated in favor of our allies in giving aid. Moscow does this too; but the evidence suggests it's harder for us to get away with. Our troubles with Egypt's Nasser and the other Arab nationalists are examples.

• **U. S. advantages**—The biggest one is wealth. The U. S. is four times richer than the Soviet Union and can afford to outspend Moscow.

Furthermore, our aid is generally viewed as more dependable, despite Soviet efforts to portray it as tangled in political strings. Soviet aid deals are one-shot affairs, and Moscow has canceled deals outright for political reasons—as it did in Yugoslavia.

• **The outlook**—There are curable weaknesses in our aid programs. Many observers urge more continuity through appropriation of large sums for indefinite periods. That would enable the U. S. to participate in long-range economic partnerships with underdeveloped countries (see p. 92).

Some critics feel the Administration should be given more flexibility and protection from Congressional harrassment in operation of aid programs. And many experts argue that rapid economic development in itself may promote violent political upheavals—which the Soviets are in a better position to exploit.

U. S. officials, however, believe it is imperative to help underdeveloped nations. Otherwise these countries will turn to Russia.

But economic aid isn't all. There

is a growing feeling in Washington that the U. S. must learn to live with violent change in underdeveloped nations, if it comes, and not let the Soviets become the uncontested champions of social change. Furthermore, we must accept the desires of nations that want to remain neutral—or push them into the Soviet bloc.

4. Construction Man's View

No one should know better how well or ill foreign aid construction has fared—in their own experience—than the U. S. engineers and contractors who have worked overseas. Here are a few comments solicited by ENR:

Guy Kelcey, Edwards & Kelcey, consulting engineers, Newark, N. J., says, "The objective of our overseas mission to Iraq has been to set up and train personnel for a highway department. We believe the results have justified the effort . . . a reasonable facsimile of a state-side department is well along."

H. W. Morrison, president, Morrison Knudsen Co., Boise, Idaho, praises our engineering programs abroad. But he observes that "many countries lack ability to manage properties after they are available."

Calvin Davis, president, Harza Engineering Co., Chicago, says, "The most important investment we could make . . . would be for basic education and its required physical plant. Simple and inexpensive elementary and trade schools are needed. Properly located, they would furnish direct evidence to all of American aid. Hospitals, clinics and mobile health units are also needed, as are roads and wire services. And many miles of passable trails are worth more to the masses for an equal investment than a superhighway between major cities."

A consulting engineer calls for "financial commitments large enough to cover several years, to permit intelligent scheduling and better execution." He urges selection of consultants on strict basis of qualifications, with negotiated fair-payment contracts; and says all foreign aid should emphasize training of local people.

A contractor says some projects have been "too inadequately engineered" and that it's "too much of a general practice to select contractors on price instead of ability and experience.

Another consultant charges that some large water resources programs are carried out backwards, considering the unstable conditions abroad. Major reservoirs are built first, while irrigation canals are left for later. If all went well, the canals would be completed at the right time. But conditions can change, leaving a big project unfinished and unusable. He recommends building canals first.

U. S. concrete experts* on Russian tour find . . .

Soviet Prestressing Impressive

The Russians are way out in front of us in construction of precast, prestressed concrete multistory buildings; but fall behind in the use of prestressing for bridges. That's the opinion of six American engineers just back from the U.S.S.R.

Three members of the American study team were interviewed by ENR in San Francisco following their return. They were Prof. T. Y. Lin, University of California, head of the delegation; Ben C. Gerwick, Jr. president, Prestressed Concrete Institute and head of his own San Francisco construction firm; and Prof. Boris Bresler, University of California.

Russia's huge demand for better housing has placed great emphasis on building construction, the Americans say. Builders are assigned quotas by the government. They work to standard designs after test-building different designs.

Designs are not frozen after standardization, however. A few years ago big multistory apartment houses were being built of concrete block. Then the Russians shifted to precast concrete elements. Now they are making extensive use of prestressing for such components as wall panels and floors.

The Russians have a decided advantage in their ability to concentrate research, the Americans think. And mass production of a single type or a few types of building is certainly economical. Prestressed elements are rapidly being put into mass production. However, the advantages of low cost and quantity are partly offset by relatively poor workmanship, the U. S. group says.

Russia apparently has been influenced to a marked degree by construction in other European countries, the U. S. engineers said. But they saw very little evidence of adoption of U. S. techniques. Soviet engineers have developed many original ideas. For example, automatic winding of pretensioning wires for building panels.

The most unusual structures viewed were two prestressed shells made of precast units. A standard shell developed for market buildings and other one-story structures is 131 ft square. It costs more than a truss roof, but it being extensively used. Another shell has a 328 ft span. Like the smaller one, it is made of several elements assembled and prestressed on ground-level falsework and then lifted onto columns. Average concrete thickness in the big shell is 6.3 in.

Russian engineers seem to have a high degree of freedom of thought, the visitors believe. They are somewhat tied down in research work, however, by being assigned specific applied research problems to fit construction goals of the current five-year plan. Fabricating plant operators appear to have more freedom of action. They are assigned specific equipment, but are allowed to work out production techniques themselves.

Other members of the traveling U. S. group were Walter Price, former president of the American Concrete Institute and chief of the Bureau of Public Roads concrete laboratories, Denver; David Billington, Roberts & Schaeffer, consulting engineers; and James D. Piper, vice president, Portland Cement Association.

* **Americans and hosts are (l. to r.): Two unidentified Russians, Soviet Prof. Boris Skramtaev, Walter Price, Prof. Boris Bresler, Ben C. Gerwick, Jr., a Russian lady architect, David Billington, Prof. T. Y. Lin and James Piper.**

Ax Hits Military Construction

Military construction plans were severely jolted last week. The House passed a money bill cutting more than half a billion dollars from Defense Department construction fund requests for the current fiscal year. The measure sent to the Senate provides $1.22 billion instead of $1.73 billion asked by the Administration to finance new military projects.

Back of the cut lies the determined action of a tough-minded Appropriations Committee. It saw nothing sacred about military construction plans, even in times of crisis.

Faulty planning was given as the reason for denial of funds in almost every instance. Planning deficiencies, the committee said, go much deeper than engineering design. Management planning, systems planning, and over-all military planning were blasted.

Repeatedly, in the report accompanying its appropriations bill, the committee decries the lack of adequate planning, in the basic military sense, as it relates to construction.

This is particularly true, the committee adds, "in connection with new weapons systems and technical equipment being added to the arsenals of our military services." The committee states that planning of facilities for some systems has lagged so badly that the services' requests for construction funds have been based on little more than "a dream in some planner's mind."

• **More planning urged**—As a corrective, the committee urges the Secretary of Defense to see that adequate and realistic planning for necessary facilities are made in an integral part of the over-all programming for weapons systems and advanced technical equipment.

Carrying out a policy against blank check appropriations, the committee made a $90 million reduction in a $165 million Air Force request for ballistic missile facilities just started and scheduled for completion next spring. The Air Force is to ask for funds when it has definitive plans and realistic cost estimates.

No cuts were made in Air Force construction requests for Bomarc missiles, $77 million, and strategic missiles, $29.6 million.

The committee denied funds requested to build facilities for manned aircraft of the Air Defense Command at five Air Force bases that are to have Bomarc missiles: Duluth, Ethan Allen, Kinross, Niagara Falls and Truax.

These cuts at bases where Bomarc installations are scheduled point up the committee's concern over "the effect of the increasing emphasis on missiles in air defense on continued use of manned aircraft." The shifting emphasis on weapons systems "accentuates the need for a thorough analysis of the military construction programs in this field."

• **Use existing facilities**—Lack of long-range planning for construction in top military echelons produces other wasteful effects, the report indicates. Total or partial closing of some permanent military installations could have been avoided if proper attention had been given to construction programming in the past, the committee believes. It insists that the Defense Department compel the use of existing facilities, wherever possible, as a substitute for construction.

Failure in this regard was obvious, the committee says, in the fiscal 1959 construction program that it trimmed.

So the House group directs the Secretary of Defense to pool all military facilities not being fully used and to enforce transfers of these installations between services, if necessary.

Requests for desirable but unessential projects, gave the committee special concern, the report says.

• **Where they cut**—A long list of barracks, officers quarters, commissaries, and swimming pools failed the essentiality test. They were struck from the bill. Hospitals, warehouses and other buildings suffered a similar fate wherever existing facilities could carry the load or if immediate need was questionable.

Air Force appropriations took the biggest cut—down $300 million from $1 billion to $700 million. Army requests for new construction money were reduced by $126 million, from $341 million to $215 million. For the Navy, committee deletions of $85 million shrank new construction funds from $368 million to $283 million.

Total construction money available to the services for new construction projects this year actually is greater than the funds that Congress is appropriating. Carryover funds increase the gross amount by some $400 million to a total topping $1.6 billion, on the basis of the House-passed bill.

This total falls about $375 million short of the $2 billion that the Defense Department wanted to have in hand for new construction projects in the current year. But the shortage is considerably less than the $512 million cut the House made in its appropriations bill. The effect on new construction awards will be proportionately smaller.

Bridge Crash Witnesses Testify

Hearings on the fatal collapse of Vancouver's Second Narrows Bridge produced testimony last week from a large number of witnesses and then were recessed until September 30. The temporary adjournment will give two new engineering investigators time to study the June 17 tragedy that claimed 18 lives. It also will provide time for recovery and examination of submerged parts of the fallen structure.

The inquiry had been reopened July 21 after a formal opening and short session July 9, when all companies working on the bridge filed their contracts, plans, specifications and other documents.

British Columbia Chief Justice Sherwood Lett, investigating the crash as a one-man Royal Commisison, summoned the two new engineers to assist Montreal civil engineer Philip L. Pratley, who was called in by Justice Lett at the beginning of the inquiry. One of the new probers is Frank M. Masters, partner in the consulting engineer firm of Modjeski & Masters, Harrisburg, Pa. The other is an unnamed British engineer.

Engineers hope inspection of the tangled steel now below water will give them some clues as to why the bridge collapsed. Dismantling of the two fallen spans will begin August 1. The job will take three months, according to the contractor, Dominion Bridge Co., Ltd. Meanwhile, the company will begin erecting steel in October on the south shore, across Burrard Inlet from the wreckage. Steel work on the structure is expected to be finished about the midde of next year.

Among the witnesses heard last week was construction superintendent James English. He testified that loads on the extended span when it collapsed included a locomotive weighing 25 tons, two five-ton cars each loaded with 52½ tons of steel, and a 100 ton traveling crane.

Other witnesses included Workmen's Compensation Board officials. They testified that safety precautions were good, all standard safety equipment was provided and safety meetings were held weekly. A meteorologist told the commission that maximum wind speed on the day of the disaster was 16 mph. Seismic causes were ruled out by a letter from an astrophysical laboratory stating that there were no earthquakes near the time of the crash.

Homebuilding Code Proposed

Efforts to promote uniform building regulations throughout the U.S. received a boost last week. The American Standards Association announced it was considering development of standard building-code requirements for one and two-family houses.

ASA is calling a general conference for September 9, and inviting national groups concerned.

"Purpose of the conference," said Cyril Ainsworth, deputy managing director of ASA, "will be to determine whether a consensus can be reached on the initiation of a project for the development of American Standard building-code requirements for one and two-family houses."

• **Aim is to cut costs**—Mr. Ainsworth said the conference is being called in response to a request from 14 national organizations concerned with homebuilding, including the American Institute of Architects, National Association of Home Builders and Building Research Institute.

Backers of the standardization proposal claim that variations in building-code requirements from one jurisdiction to the next make house construction unnecessarily costly. They believe establishment of a national code will produce savings by making possible nationwide distribution of acceptable materials, enabling communities to obtain a good code at little or no cost and eliminating the problems builders now have in shifting projects from one jurisdiction to another.

• **Long-sought ideal**—Many individuals and organizations have been struggling for a long time to establish uniform building regulations in the U.S. Four model codes have been developed. They were sponsored by the International Conference of Building Officials, Building Officials Conference of America, Southern Building Congress and the National Board of Fire Underwriters. Several states also have issued uniform building regulations.

Meanwhile, for nearly a decade, a Joint Committee on the Unification of Building Codes has been quietly and patiently endeavoring to eliminate the differences between the model codes. Progress has been made, but slowly.

• **Hope for public support**—Plans for establishment of national standards call for two major steps: (1) Establishment of an American Standard residential code; and (2) mustering of public opinion to force local adoption of the standard.

Supporters believe that limiting the standards to one and two-family houses will increase chances of success. For one thing, there will be a smaller area of agreement to be reached by code sponsors. It also will be easier to arouse public interest in changes needed to improve housing.

• **Possible blocks**—Many barriers, however, will have to be hurdled before the benefits of a national code can be realized, some observers believe. Here are a few:

• Developing a code and keeping it up to date is very expensive. Who will pay for this project, since the ASA does not provide funds but seeks financial support from sponsors of a standard?

• Will the sponsors of the national model codes and the state codes adopt the proposed standard? Even if they do, will the new entry in this field fare any better in securing recognition at the local level than the older model codes or the National Plumbing Code, National Electrical Code and minimum requirements for design loads, which are American Standards?

• Many backers of the proposed American Standard code believe it will lower construction costs because its requirements would be more liberal than those in existing codes. But there is no guarantee of this.

Concrete Wins Round 1 of Big Pipe Job

It was concrete by considerably more than a nose in the first heat of the largest current water pipeline job in the East. The competition is at fever pitch between steel and concrete pipemakers on Baltimore's 33 mile line to tap the Susquehanna River.

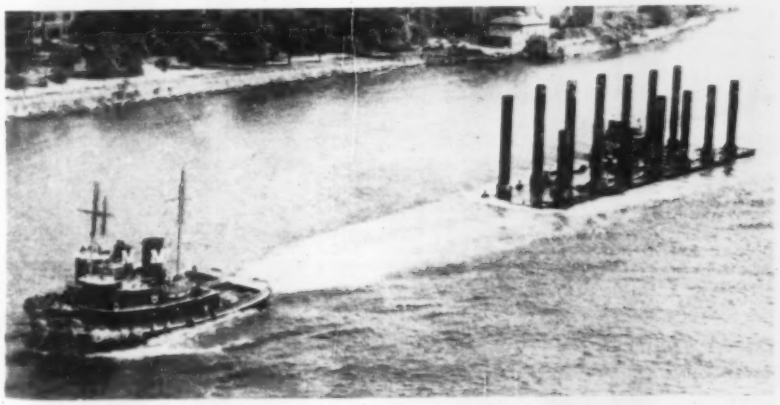
Last week the city awarded a $3,165,000 contract for the first 30,200 ft—of 96 in. size—to Wright Contracting Co., Columbus, Ga., which bid on embedded-cylinder prestressed concrete with rubber gasket joints. Supplier will be Lock Joint Pipe Co., East Orange, N. J. Lock Joint recently built a pipemaking plant in the Baltimore area, apparently in anticipation of this job and the 131,000 ft of 108 in. line to be bid sometime next year.

There were 15 bidders on the first section, five bidding on steel pipe. Lowest steel price was $3,426,163, which was third low among all bids. High bid was $4,212,259. The engineer's estimate was $3.7 million.

Specifications on the steel alternate called for cement-lined, mortar-coated pipe and cathodic protection. The low steel bidder figured on welded joints.

Next work to be called on the $35 million Susquehanna water source development job is a 15,000 ft concrete lined tunnel of 108 ft in dia and an intake above the existing Conowingo Dam. Then will come the last two pipeline sections of 69,000 and 62,000 ft.

The Susquehanna source is designed to supply Baltimore's ultimate water needs (ENR May 3, 1956, p. 40). Whitman, Requardt & Associates, Baltimore, is the city's consultant. Bernard L. Werner heads the Water Department.



Ready-Made Pier Towed to Final Berth

This 283 x 60 ft. section of a prefabricated coal pier is headed for its permanent berth in the vicious tides of New York City's Hell Gate. Protruding through the deck are the legs of the pier. They're 6 ft in diameter, and vary in length from 40 to 52 ft. When the unit is positioned, the legs will be lowered through the deck and anchored to the river bottom by dowels and concrete. The floating section will be added to an existing pier at a Consolidated Edison waterfront steam generating plant. It was built by Bethlehem Steel Corp. for the DeLong Engineering and Construction Co.

Federal Road Spending to Set Record

This week, the government unveiled the biggest single-year dollar outlay ever made at one time for federal-aid highway construction. It came when Secretary of Commerce Sinclair Weeks apportioned some $3.4 billion among the states for the government's share of building roads for fiscal 1960—beginning July 1, 1959 (see table).

Biggest share of the money will go toward completing the 41,000-mile interstate system slated to be finished by the early 1970's. Some $2.5 billion is earmarked for the federal government's share of construction on these roads in fiscal 1960. The federal government pays 90% of the cost of these roads, the states pay the other 10%. The other $900 million is the government's contribution for building the primary, secondary, and urban highways. States match this money on a straight 50-50 basis.

A new system for doling out federal-aid money to states for the interstate highway system is used in the 1960 apportionments. The traditional system called for allocating money to states based on population and area. This year, money for the interstate system was apportioned in the ratio that the estimated cost of completing the system in each state bears to the total estimated cost of completing the entire system.

For example, if the cost of completing the interstate roads in a state amounted to 10% of the total cost of finishing the interstate system nationwide, then that state got 10% of the 1960 money. States furnished the Bureau of Public Roads with these cost estimates back in January of this year. Apportionment of the 50-50 matching money was kept on the traditional allocation formula.

The beef-up in construction money for highways was voted by Congress this session when it passed the 1958 Highway Act, primarily as an anti-recession measure. It added some $600 million to the $2.8 billion that had already been apportioned for fiscal 1959, and boosted the 1960 apportionment total.

Net increase in federal-aid money for fiscal 1960 as a result of the 1958 Highway Act is $925 million. A straight add of $25 million was voted for the rural roads, with a $300 million increase for interstate highways. But, at the same time, the 1958 act suspended the pay-as-you-go provision of the original 1956 Highway Act for fiscal years 1959 and 1960. It meant that the full $2.5-billion could be apportioned in 1960 for interstate roads rather than only the $1.6 billion that would have been available from the highway trust fund. Unless Congress votes otherwise, the highway program will revert back to a pay-as-you-go basis in 1961 with the state apportionments held down to the actual amount of money in the trust fund during the year apportionments are made.

Here Are the 1960 Highway Allocations

(In Millions)

State	1960 Total $3,400	1959 Total $2,875	Interstate $2,500	ABC System $900
Alabama	$67.1	$58.3	$49.1	$18.0
Arizona	44.9	33.3	34.0	11.0
Arkansas	37.8	41.5	24.7	13.1
California	302.0	163.4	252.8	49.2
Colorado	33.3	40.7	19.3	14.0
Connecticut	38.7	27.3	30.3	8.4
Delaware	12.6	16.2	8.8	3.8
Florida	79.2	47.9	64.5	14.8
Georgia	80.6	65.9	60.0	20.5
Idaho	26.0	28.8	17.2	8.8
Illinois	167.2	132.4	127.6	39.6
Indiana	93.2	69.1	71.7	21.4
Iowa	42.7	58.8	23.6	19.1
Kansas	40.2	53.6	22.3	18.0
Kentucky	59.7	52.7	43.7	16.0
Louisiana	79.9	46.4	65.7	14.2
Maine	19.5	22.5	12.8	6.7
Maryland	65.9	33.6	56.0	9.8
Massachusetts	85.9	58.6	69.3	16.6
Michigan	128.5	102.1	97.8	30.7
Minnesota	68.2	65.7	46.9	21.3
Mississippi	41.5	45.4	27.3	14.2
Missouri	95.6	77.6	71.0	24.7
Montana	42.5	42.3	28.3	14.2
Nebraska	30.1	42.9	15.3	14.7
Nevada	21.6	29.1	13.0	8.6
New Hampshire	17.7	16.4	13.7	4.0
New Jersey	97.7	60.0	80.5	17.3
New Mexico	41.4	35.5	29.8	11.6
New York	180.2	197.9	123.2	57.0
North Carolina	35.2	71.3	13.5	21.7
North Dakota	21.1	31.7	11.0	10.0
Ohio	198.0	119.3	162.0	36.0
Oklahoma	39.8	52.4	22.6	17.2
Oregon	56.5	39.7	43.1	13.3
Pennsylvania	144.6	148.2	101.4	43.1
Rhode Island	16.6	17.3	11.6	5.0
South Carolina	31.9	37.7	20.5	11.4
South Dakota	21.5	33.8	10.5	10.9
Tennessee	92.5	60.3	73.8	18.7
Texas	166.5	168.0	112.4	54.1
Utah	31.8	27.6	23.3	8.6
Vermont	27.2	16.0	23.5	3.7
Virginia	122.6	56.7	105.4	17.2
Washington	59.7	46.4	45.0	14.6
West Virginia	40.9	33.0	31.2	9.8
Wisconsin	46.6	65.0	26.2	20.4
Wyoming	34.5	29.1	25.8	8.7
Alaska	13.8	13.4		13.8
Hawaii	4.1	4.0		4.1
Dist. of Col.	30.0	17.6	24.7	5.3
Puerto Rico	6.3	6.1		6.3

BPR Quashes Texas' "Buy American" Order

The Texas Highway Department's "Buy American" order (ENR June 12, p. 136) was overruled this week by the U.S. Bureau of Public Roads. Highway Administrator Bertram D. Tallamy emphasized, however, that the order does not represent "at this time any nationwide policy in regard to restrictions respecting foreign-produced materials."

Before informing Texas of its decision, BPR consulted with both the Commerce and State Departments.

Texas' ban on foreign-made materials in federally aided highway construction was to have been effective August 1.

BPR told ENR that no other states have yet approached it on a similar ban.

HOW TO HANDLE WET JOBS

#43 of a Series

Project: Power Plant, Yankeetown, Ind.
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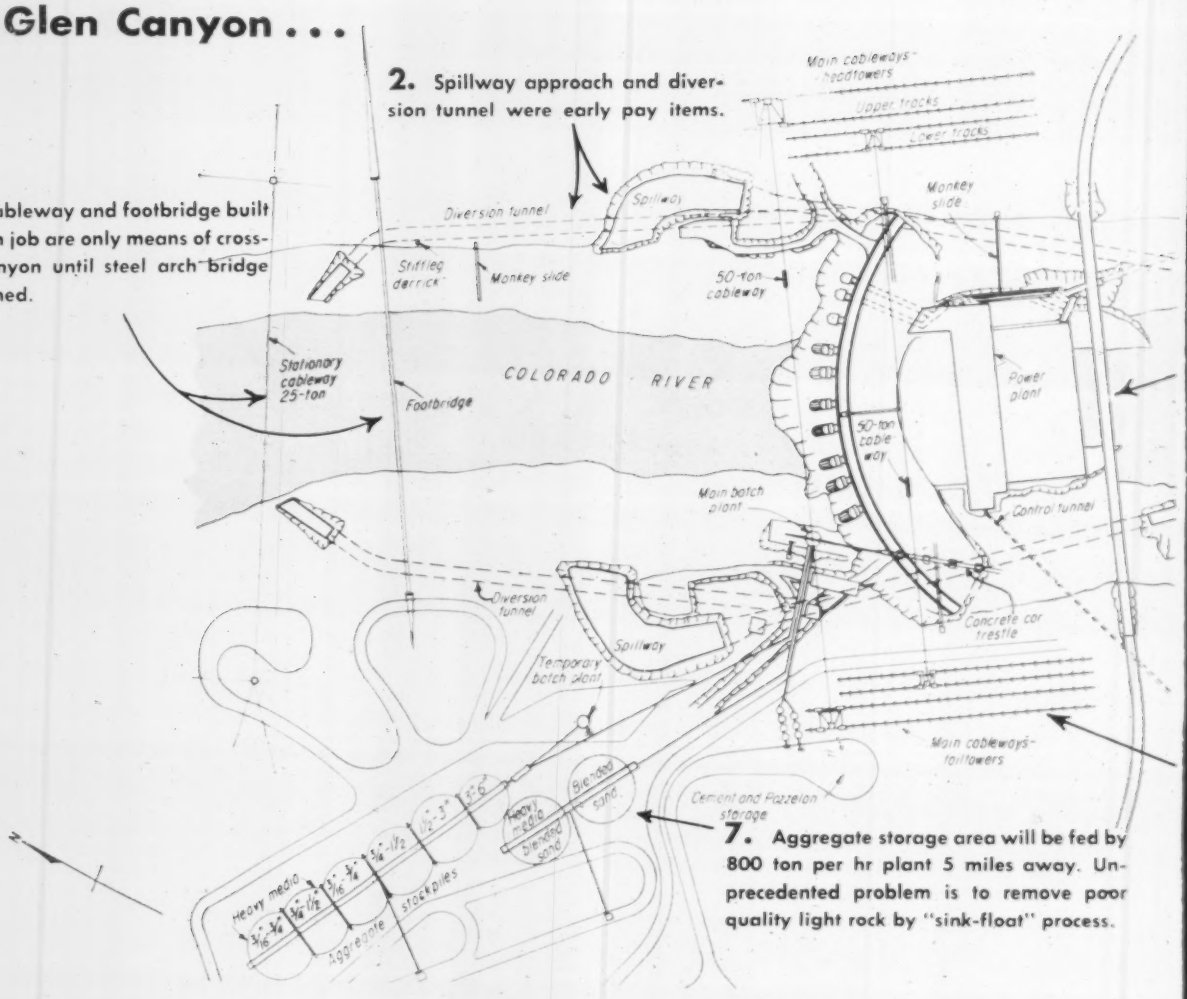
At Glen Canyon . . .



Mighty Construction Plant Faces

It may seem strange that more than two years will elapse from award of the $108 million contract for Glen Canyon Dam to placing of first concrete sometime next year. But general contractor Merritt-Chapman & Scott has had a lot to accomplish in planning and building a mighty construction plant.

It has to be mighty, for concreting facilities at Glen Canyon are aimed at an unprecedented 9,000 cu yd daily rate. And the dam is a 5 million cu yd job.

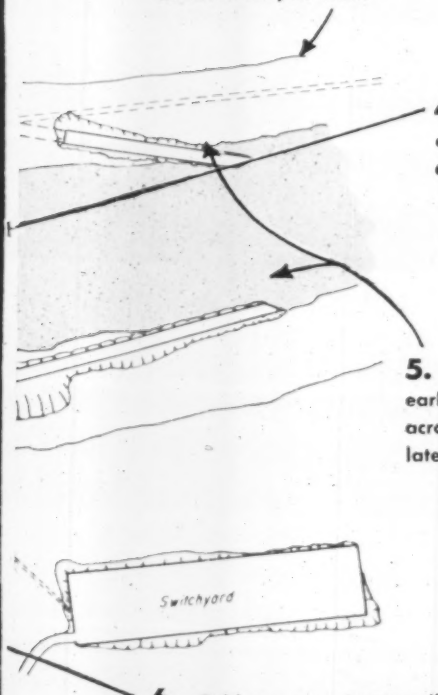
Work on the plant has reached the point where its leading features can be described.

Most unusual facility at the Arizona site is a heavy media plant in the aggregate production process that removes material lighter than 2.5 specific gravity. Some 700,000 tons of aggregate will be processed this way. Purpose is to produce more durable concrete for use in surface portions of the dam and in such exposed places as the powerhouse structure and tunnel linings.

Access to the job and through the job has been difficult. Just getting men and equipment across the 1,200 ft wide, 700 ft deep Colorado River gorge has been a major problem. MC&S installed a 25 ton cableway to haul equipment across the gorge and lower it to the bottom. And a cable-supported footbridge was built to get workmen from one side to the other. This type of access problem will be eased considerably on completion late this year of a spectacular steel arch bridge constructed under a separate contract by Kiewit-Judson Pacific Murphy.

MC&S has made considerable progress on the excavation phases that can be handled prior to river diversion. Subcontractors have completed the right diversion tunnel and are well along on three other tunnels. These are the left diversion tunnel, the powerhouse access tunnel and the powerhouse control tunnel. And most of the spillway approach excavation has been completed. MC&S also has made many of the purchases that will be necessary for the seven year job. For example, all of the reinforcing steel has been bought and is stored on the job.

• **Aggregate sources limited**—Good sources of concrete aggregate are extremely limited in the Glen Canyon area. The natural geological formation is almost entirely sandstone and that doesn't make good concrete. The only



3. Access to powerhouse will be through 1.7 mile tunnel being dug in sheer canyon wall.

4. Spectacular steel arch bridge across 1,200 ft canyon will ease access problems later this year.

5. Diversion tunnels will take first water early next year when cofferdam is thrown across river upstream of dam. Tunnels will later serve as spillway.

6. Cableways next year will handle 12 cu yd buckets filled by transfer cars on trestle. Hoped for rate is 9,000 cu yd daily for 5 million cu yd job.

Unique Rock Problem

aggregate source available is six to ten miles north of the dam on Wahweap Creek, a Colorado tributary.

This ancient river bed deposit contains rock of varying types and suitability. Some of it is granite, which is quite usable. On the other end of the scale, however, are chert and siltstone rock. This rock is acceptable in mass concrete, but it weathers quickly when used in exposed concrete.

Bureau of Reclamation personnel in the Denver concrete laboratory made detailed studies of the Wahweap aggregate deposits. They were aided in their work by R. E. Davis, consulting engineer of Berkeley, Calif., and long prominent in concrete technology.

Mr. Davis warned that weathering was due to "pop outs caused by expansion of particles of calcareous siltstone and chert and by ferruginous concretions."

Fortunately, the most troublesome rock where weathering is concerned has low specific gravity. Accordingly, the designers accepted a recommendation by Mr. Davis requiring the contractor to remove rock of low specific gravity from the aggregate to be used for concrete in exposed places. Thus, by stripping out of the aggregate all rock with specific gravity less than 2.5, almost all of the troublesome siltstone and chert can be removed.

Heavy media separation never has been specified on dam construction, although it has been used in a few commercial aggregate plants in the U. S. And there is no available record of processing sand by such means. It wouldn't be used at Glen Canyon either if a more suitable aggregate source were available.

Permanent aggregate processing facilities have not yet been installed at Glen Canyon. However, a pilot heavy media plant is now on trial run in connection with a temporary screening plant. Aggregate is needed for some early concreting work, such as the lining of the diversion tunnels—part of which will ultimately serve as spillway tunnels.

• **Heavy media process**—The heavy media plant was designed for MC&S by Southwestern Engineering Co. of Los Angeles. It employs a sink-float process as used in ore processing installations. The aggregate, by means of an inclined rotating screw, is passed through a heavy fluid, which has 2.5 specific gravity. The lighter rock particles float in this fluid and are collected and wasted. Heavier rock passes on through.

The fluid consists of finely ground ferrosilicon and magnetite mixed with water to the proper specific gravity. The aggregate is screened and washed before being introduced into the heavy media plant. And both the heavy media aggregate and lighter rejected material are washed after processing to recover the ferrosilicon and magnetite. A second machine reprocesses the fluid to keep it at the proper specific gravity.

Some 700,000 tons of heavy media aggregate will be produced for the project. Heavy media concrete will be used in a 10 ft thickness in both faces of the dam and in other critical exposed places.

Sizes to be processed range from a No. 8 screen to 1½ in. rock. This breaks down into one sand size, from No. 8 to ⅜ in. screen and two rock sizes, ⅜ to ¾ in. and ¾ to 1½ in. Sand smaller than a No. 8 screen will not be processed through the heavy media plant.

MC&S is still experimenting with the temporary heavy media plant installation. For example, it was found necessary to process all the sand and rock sizes through the plant separately. Other arrangements are possible.

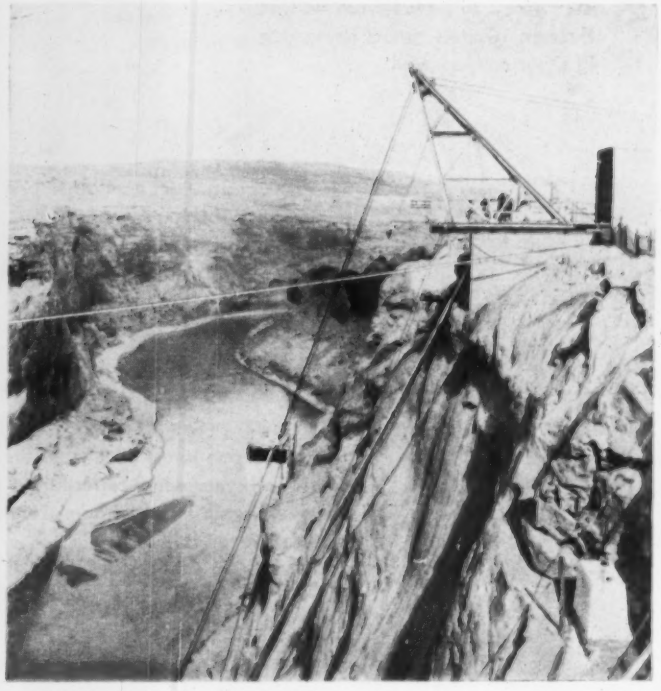
No cost figures are available yet on heavy media processing. But R. E. Davis once estimated cost at about 20 cents a ton.

Permanent aggregate production facilities will be located near the center of the Wahweap deposit about 5.2 miles from the concrete batch plant. The temporary plant is on the downstream edge of the deposit. Haul from the aggregate to the batch plant will be over a gravel-surfaced road with truck tractors pulling bottom dump trailers.

The preliminary aggregate screening installation is pegged at 75 tons per hour capacity. This requires input into

SUSPENSION FOOTBRIDGE and cableways (not shown) are only means of crossing 1,200 ft wide canyon.

. . . Getting to the job and removing light rock from



"MONKEY SLIDE", a cable supported elevator, moves men and light material into 700 ft deep Colorado River canyon.

the plant of about 200 tons per hour. The permanent plant will have a capacity of 800 tons per hour. Raw aggregate will be developed by scrapers as well as draglines and trucks.

• **Placing cableway concrete**—At the dam site, concrete will be placed by two 50 ton Lidgerwood cableways. Both will be equipped with movable head and tail towers. Main track cable will be 4 in. dia. The lower unit will have 810 ft lateral travel and the higher unit will have 910 ft lateral travel.

Concrete will be brought to the cableways in 12 cu yd transfer cars. The transfer cars will be hauled by small engines on a trestle and will discharge into 12 cu yd buckets. The contractor figures it's easier to haul concrete in cars, rather than in the concreting buckets since the cars can adjust easily to the bucket position. And it eliminates the need for hooking and unhooking buckets during concreting.

The batch plant will be a Noble plant with six 4 cu yd A. O. Smith mixers.

Aggregate will be stockpiled in six gravel piles and two sand piles—sand and gravel will have separate recovery tunnels. Two of the aggregate stockpiles are for heavy media rock and one sand pile is for a blended heavy media sand.

• **Concrete cooling**—As expected in a large dam in a hot area, concrete cooling is necessary. USBR specifications require that the concrete be a maximum of 50 F and a minimum of 40 F during placement. Some cooling will be done by spraying the aggregate with ice water on the conveyor belt between stockpile and batch plant. The rock temperature can be reduced 15 deg. just by belt spraying alone.

Cold air will be circulated in the batch plant storage bins for further cooling. Ice will be added to the mixing water.

A 600 ton (7.2 million Btu per hour) refrigeration plant is being installed for the cooling process. Some of the refigeration equipment was previously used at Folsom Dam. But most of it is new.

A temporary batch plant has been installed to handle concrete work necessary before main concreting begins. It is a Johnson plant with two 4 cu yd Koehring mixtures. It uses the same aggregate storage facilities as the permanent plant will use.

• **River diversion**—No concrete can be placed in the dam proper until the river is turned through the diversion tunnel and the riverbed is excavated to bedrock. Present plans call for the diversion to start next January during the low water flow. This will involve an earthfill cofferdam that may run over one million cu yd in volume. Streambed is at El 3135 and diversion tunnel inverts are at El 3137 and El 3171. So the river level will not have to be raised much, if any, to turn it through the tunnels.

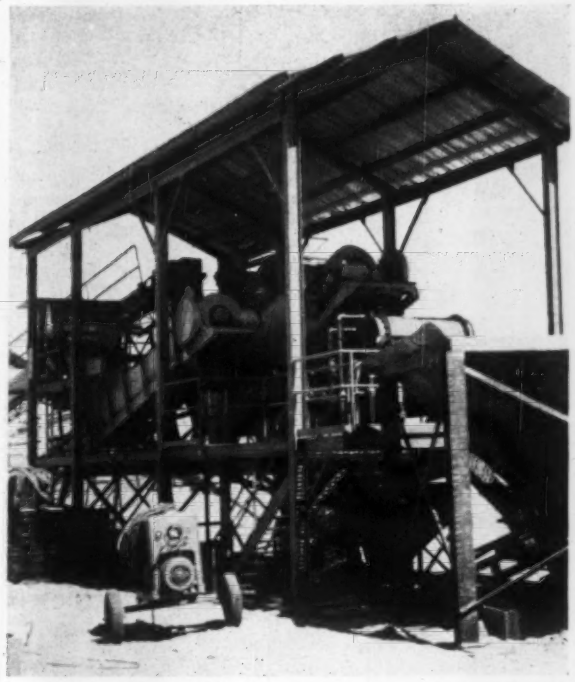
A low cofferdam will be thrown across the river to turn it through the tunnels. Then the main cofferdam will be built. Some form of surfacing will be used on the upstream part of the core. This may involve a bentonite zone or even asphalt. A sheetpile cutoff wall may be necessary.

Excavation of the right diversion tunnel was completed under a separate $2.5 million contract held by Mountain States Construction Co. MC&S is currently lining this tunnel. The left diversion tunnel is being excavated under a subcontract by Frazier-Davis Construction Co. Both tunnels are about 45 ft dia and are just over half a mile long.

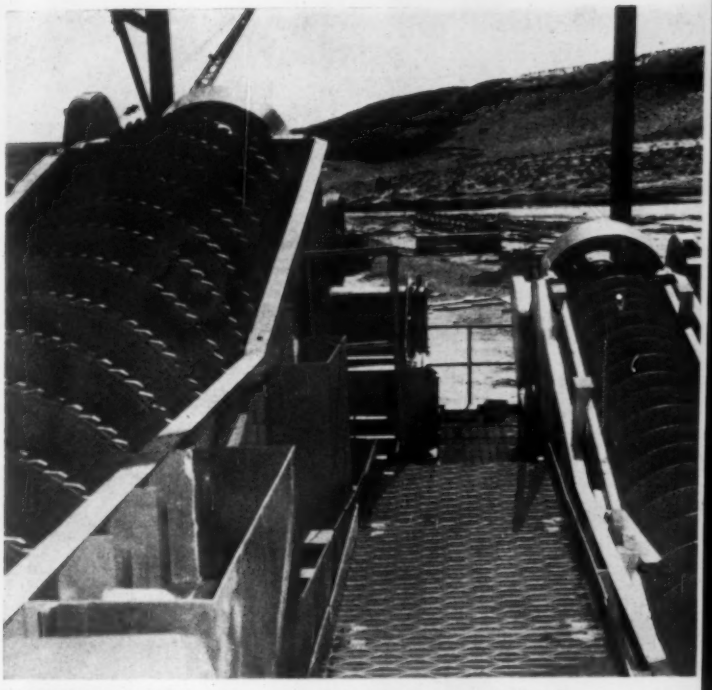
Another tunnel, 1.9 miles long, is being drilled on an 8% slope in the canyon wall to provide access to the powerhouse. Headings 20 ft wide with a 22½ ft high arched roof are being driven from both ends. The downstream end is being driven by Gibson & Roberts, a subcontractor to Frazier-Davis.

The other tunnel under way is a small bore tunnel to connect the powerhouse with the switchyard on the right bank.

aggregate are the main problems



TEMPORARY PLANT for heavy media removes faulty light rock from aggregate to produce satisfactory exposed concrete.



ROTATING SCREW (left) pushes rock through heavy fluid and light rock is scalped out. Other screw processes fluid.

• **Getting to the job**—Access has been a problem for MC&S. Early in the operations a 25 ton cableway was installed upstream from the dam to transfer equipment across the canyon and lower it to the canyon floor. A suspension type footbridge for the workmen has also been built.

Most unusual types of access equipment are the "monkey slides". These are cable supported elevators installed on an incline to lower workmen and small items of equipment to the canyon floor. There are three in operation now; several more will be installed.

On the west bank of the river shops and offices have been installed by MC&S. On the east bank the Bureau of Reclamation is building the town of Page—named after a former Commissioner of Reclamation. MC&S has a substantial area set aside for its use in Page. The USBR headquarters will be moved there in July. But until the new highway bridge is completed, the only way to get from one side of the canyon to the other is by footbridge or cableway.

Although there is still a long way to go in the construction effort, MC&S has made good progress. By early purchase of material and by extensive excavation efforts, the contractor has had a greater earning rate than originally anticipated. In fact MC&S has earned more than appropriated funds.

• **One design change**—USBR has made one major design change since bids were opened. This is a reduction in the length of the powerhouse. This reduction was accomplished by moving the control room above the first two generating units. The machine shop was relocated downstream from the service bay.

As a result it was possible to place the powerhouse closer to the dam. This shortened the penstocks with a lower cost resulting.

• **Men in charge**—Glen Canyon Dam is a unit of the U. S. Bureau of Reclamation Colorado River storage project. L. F. Wylie is the Bureau of Reclamation's construction engineer.

Wm. Denny, MC&S executive vice-president in charge of construction is in over-all charge of the Glen Canyon work.

At the site, A. R. Bacon is project manager with A. H. Griffin, project engineer, and Forrest H. Jones, general superintendent.

Glen Canyon: Among the Greatest

Glen Canyon Dam, located on the Colorado River in northeastern Arizona, is a key feature of the U. S. Bureau of Reclamation's Colorado River Storage Project. It ranks with the greatest dam projects ever undertaken. With a height of 700 ft above bedrock (580 ft above downstream river level) it will be the highest concrete arch dam in the U. S. And it will come close to Hoover Dam's 726 ft height, the highest dam of any type (Hoover is a gravity-arch).

Volume of concrete in the project is 5,200,000 cu yd, with 4,770,000 cu yd of this in the dam proper. This compares with 10,493,000 cu yd of concrete placed at Grand Coulee Dam, 4,983,000 cu yd at Shasta and 4,400,000 cu yd at Hoover Dam.

Reservoir capacity will be 28,040,000 acre-ft, ranking in the U. S. just behind Hoover Dam's Lake Mead and its 29,827,000 acre-ft. The only larger reservoir in the world now completed is the 33,300,000 acre-ft Wainganga Reservoir in India.

Power plant at Glen Canyon will have eight 112,500 kw generators driven by turbines rated at 155,500 hp under 450 ft head.

Contract for construction of the dam and powerhouse totaling $108 million was awarded to Merritt-Chapman & Scott Corp. on April 29, 1957 (ENR April 18, 1957, p. 25). Contract amount is twice the size of any previous USBR contract. Contract period is 2,500 days—nearly seven years.

STAINLESS STEEL WALLS are one of three novel features in a . . .

Sales-Promoting Office Building

A stainless steel facade, the nation's biggest air-to-air heat pump and high-intensity lighting are outstanding features of a new nine-story office building in downtown Columbus, Ohio.

Largest office building erected in Columbus in 25 years, the $5 million structure contains 171,000 sq ft of floor area. It will be occupied by Columbus and Southern Ohio Electric Co., providing office space and serving also as a showpiece for the firm—to promote commercial lighting, power supply and electric heating and cooling. Building design was planned to meet these objectives.

1. Metal facade—The south, east and west walls, except the stair tower enclosure, are sheathed in 22 gage stainless steel.

The wall panels are about 4 ft wide, 8 ft high and 1¾ in. thick; they incorporate a 4 ft square window. They weigh 3½ psf. The stainless steel outer skin is secured to a plastic-impregnated paper honeycomb filled with a phenolic foam. With this insulating core, the panel has a coefficient of heat transmission, U, of 0.15 Btu per hr per sq ft per deg F. The inner face is galvanized steel.

A closely spaced, ⅜ in. long, egg-shaped pattern was impressed into the outer surface of the panel below the window to avoid the distorted reflections characteristic of smooth polished steel.

The panels are attached to a vertical grid of 5 in. steel channels spaced 4½ ft apart.

Windows have stainless steel frames and are fully reversible on top and bottom pivots. The windows are double-glazed to minimize heat gain and loss and reduce glare. Blue-tinted, heat-absorbing, glare-reducing polished plate glass was used outside and plain polished plate glass inside.

An air-conditioning unit is located below the window and a venetian-blind pocket above.

Stainless steel also covers mullions, grid channels and calking, protecting the joints between panels. Vinyl weather seals are used wherever possible to keep calking to a minimum.

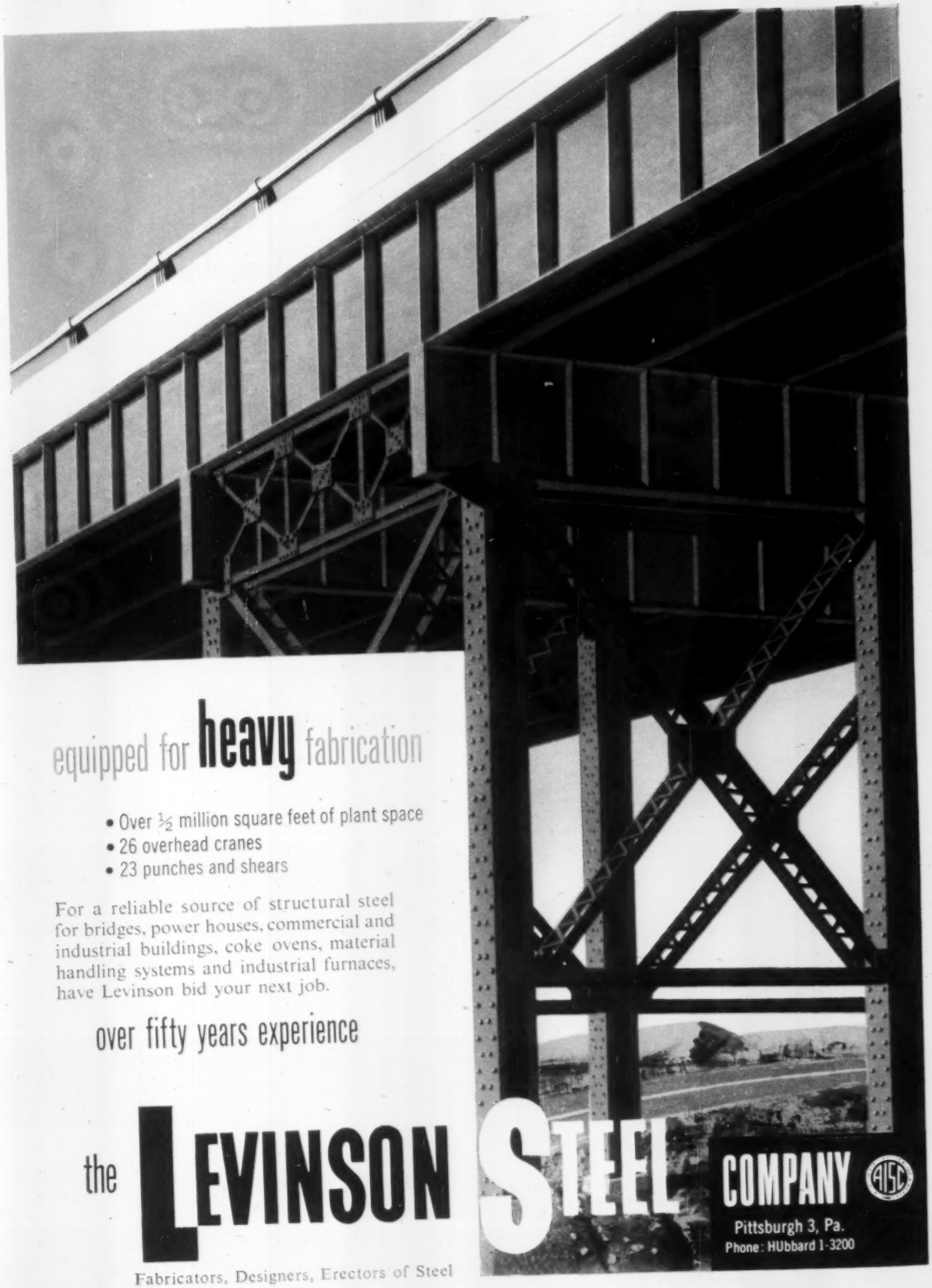
The structural frame of the building is steel, with columns spaced 31½ ft apart in both directions. Connections were made with high-tension bolts. Floors are lightweight concrete on cellular steel decking. This steel acts as a permanent form for the concrete and houses electrical conduit.

2. Largest heat pump—The building is heated and cooled by a 550 ton air-to-air heat pump run by electricity. Located on the roof, the pump extracts heat from the atmosphere to warm the building in the winter, and, with parts of the cycle reversed, expels unwanted heat in summer. Because of the high heat load from lighting, business machines and occupants, the designers expect that cooling will be required nearly all year—with little heat needed, even during the coldest days of winter. Hot or chilled water is circulated to individual fan-coil units under the windows, permitting the climate in each office on the perimeter of the building to be individually controlled. Hot or cold air is distributed in interior zones through ceiling diffusers.

3. High-intensity lighting—Another objective of the design was to provide 100 ft-c lighting minimum on nearly every work surface throughout the building. In most new buildings, minimum intensity is between 50 and 75 ft-c.

The main lobby, auditorium and dispatch room are lighted by a luminous ceiling composed of fluorescent lamps and an aluminum honeycomb shield suspended below them; the effect is diffused light and little glare.

Fluorescent tubes above the luminous ceiling of the presentation room come in white and the three basic colors: red, yellow and blue. Each color is separately controlled by switch and



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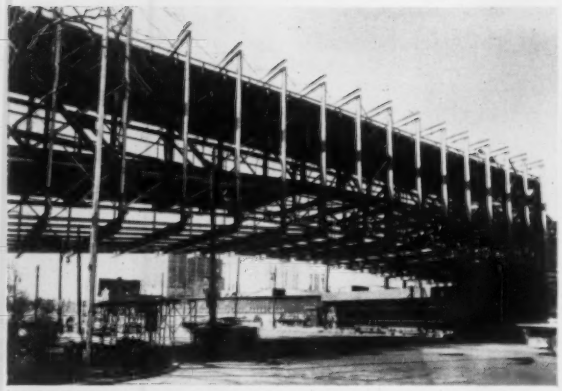
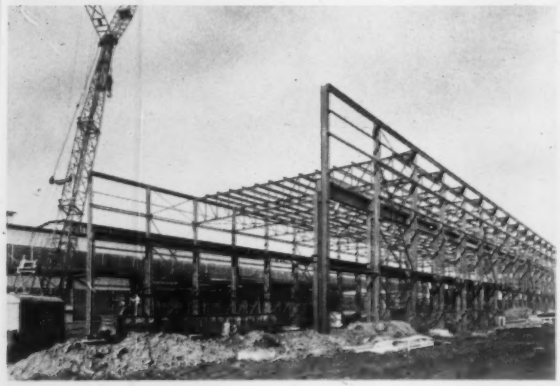
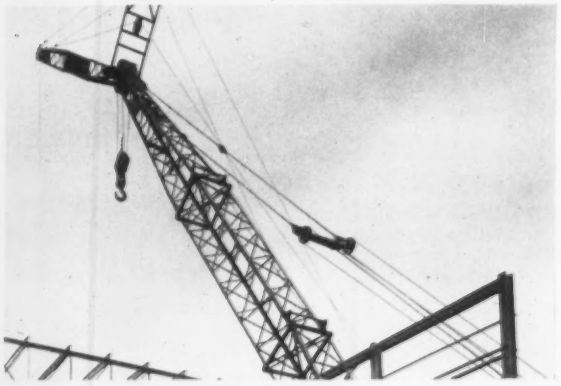


BRIDGES Here's one put up in Detroit with RB&W High Strength Bolts. They were used because they install faster than rivets, stay tight, withstand all kinds of cyclic loads, including wind, vibration.

BUILDINGS More and more multi-story steel framed buildings are being erected with high tensile bolts. It means faster construction, dollar-savings per ton of erected steel, less noise, more safety.



INDUSTRIAL PLANTS Erectors of mills, power houses, heavy industrial works and factories are taking advantage of RB&W High Tensile Bolts to give joints more strength in shear and in tension against impacts and stress changes due to operation of cranes and heavy machinery.



EQUIPMENT RB&W High Strength Bolts are doing a permanent retightening job on heavy duty equipment that has deteriorated due to rivets failing. They've saved large costly cranes. By specifying the use of high strength bolts in your new equipment, you can avoid such problems entirely, save money and downtime.

AISC approves the use of high strength bolts anywhere in place of rivets. Local building codes permit it. So there's no reason why you shouldn't get the savings in time and costs they offer... the better, stronger joints they make.

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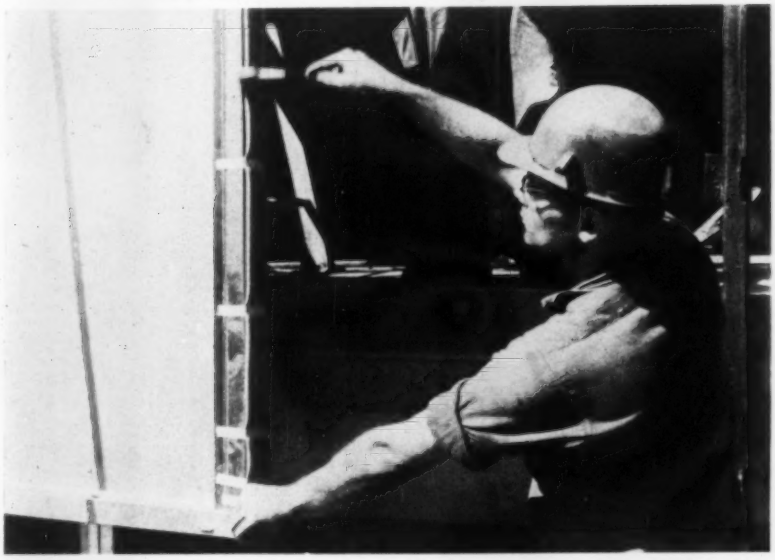
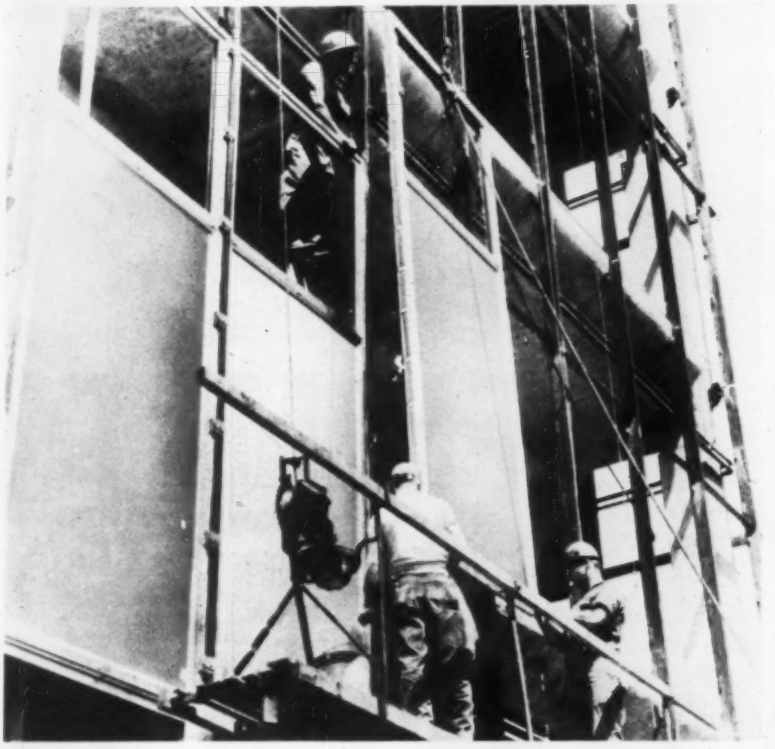


BEFORE INSTALLATION, vinyl gasket on stainless-steel-faced spandrel unit was soaped. Retaining tape was removed before unit was locked into place.



FOR INSTALLATION, panel was lifted into position and attached to vertical grid of 5 in. steel channels. Panels are about 4 ft x 8 ft.

rheostat so an entire area can be flooded with any color.

Office areas throughout the building are lighted by flush-type, shielded, fluorescent troffers recessed in perforated acoustical metal-pan ceilings. Glass diffusing lenses will be used.

Ebasco Services, Inc., New York City, was the engineer and constructor. Edgar I. Williams, New York City, was the architect. York Corp., York, Pa., supplied the heat pump. Universal Corp., Dallas, Tex., manufactured and installed the panels.

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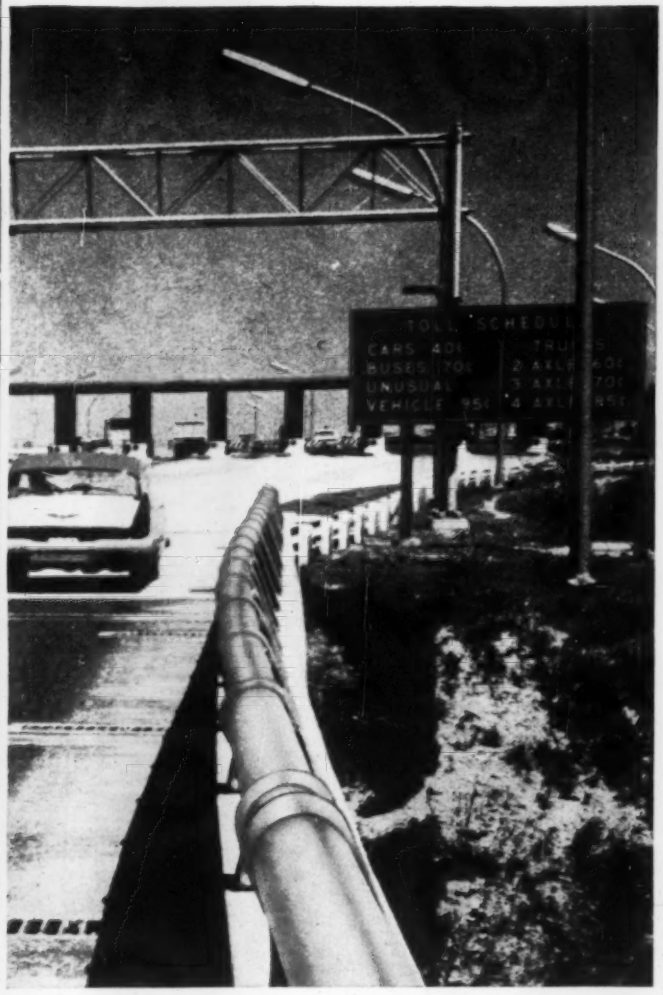

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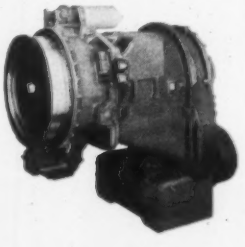

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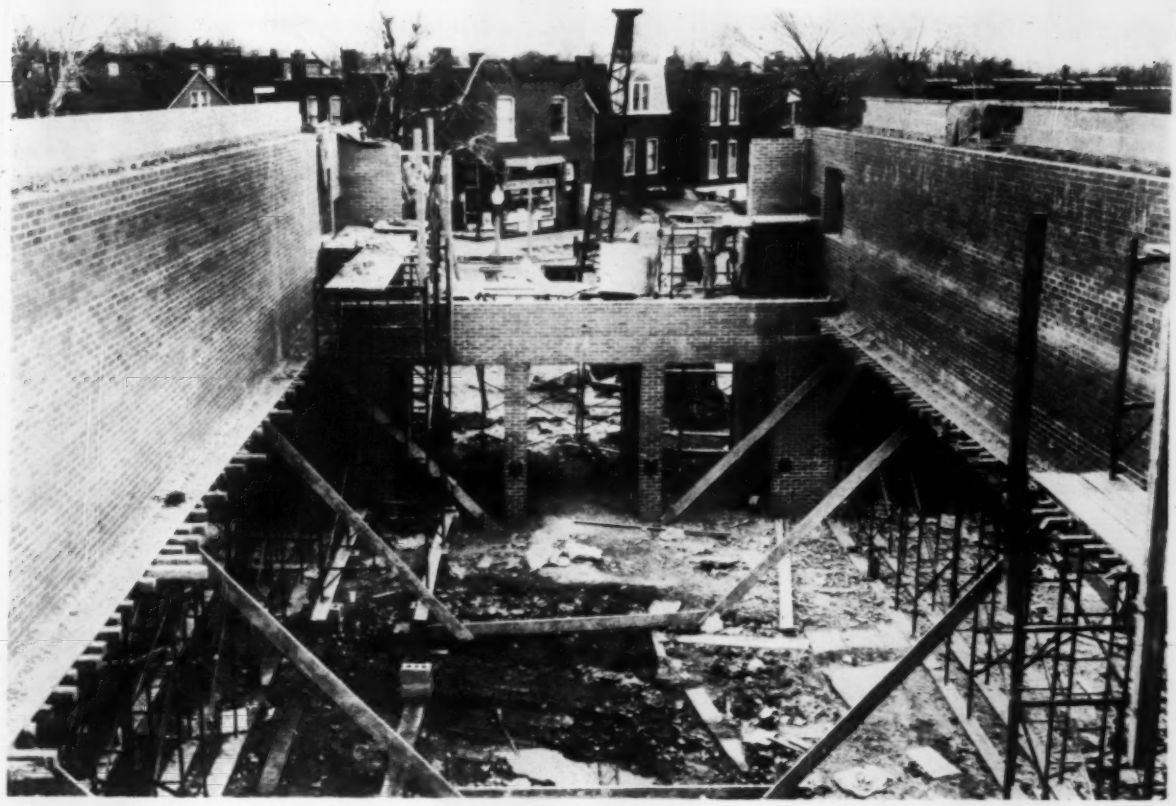
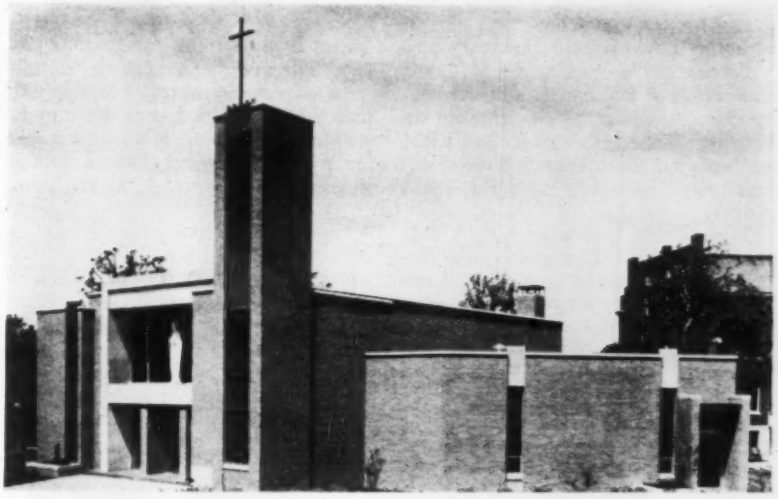


CHURCH NAVE is flanked on both sides by reinforced brick masonry girders 124 in. deep running from front to rear.

The nave of this church has no interior columns because the main and side roofs are carried on . . .



Brick Girders Spanning 65 Feet

The design of St. Hedwig's Church in St. Louis incorporates a modified clerestory that extends the length of the church from front to rear. The sidewalls of the clerestory are supported only at the ends, keeping the nave and sanctuary clear of interior columns. Exposed brick is used extensively both outside and inside the church.

The object was to provide a structural member 65 ft long that would support masonry veneer on both sides, carry the roof load from above and part of the loads from the side roofs.

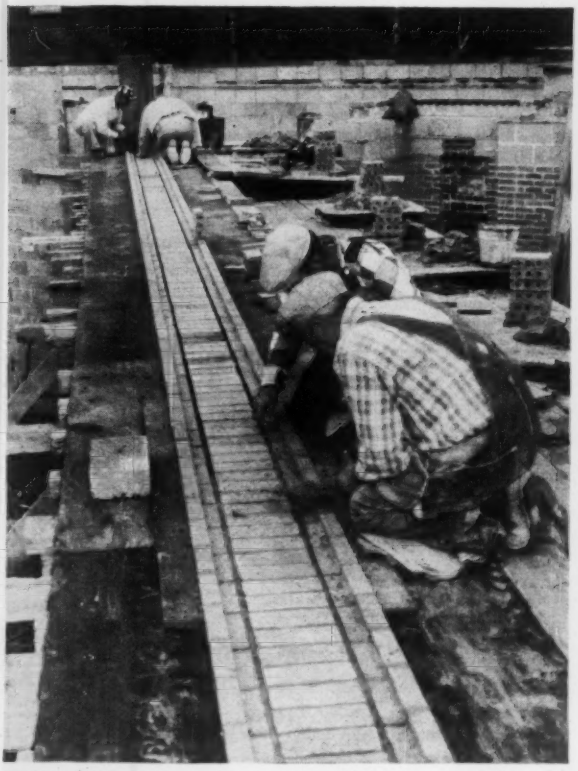
Three types of girders were considered:

1. Prestressed concrete girders. These were eliminated because with masonry on both sides they would be too thick for the desired appearance.

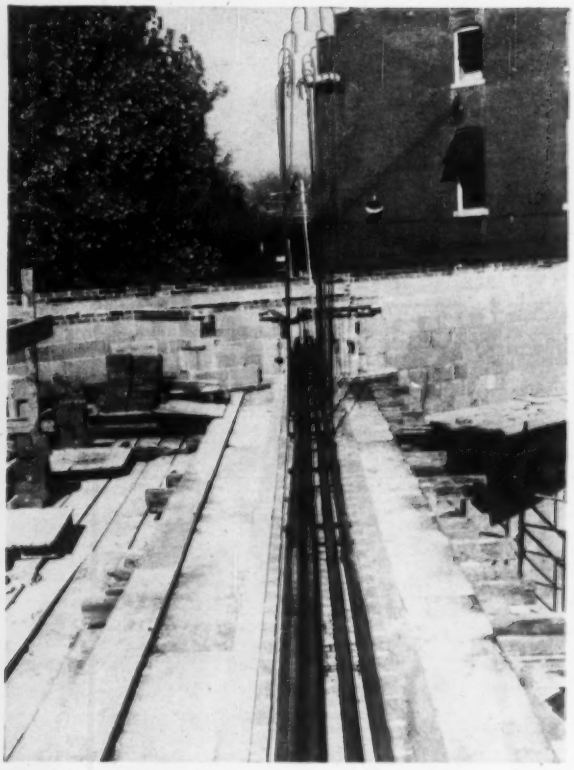
2. Brick-encased steel plate girders. These would have been end supported on steel columns built into the masonry walls.

3. RBM (Reinforced brick masonry) girders would be supported on reinforced brick columns built integrally

. . . The only forms needed were scaffolds built up to girder soffits



BRICKLAYERS start a girder with soffit brick on scaffold.



BOTTOM BARS and end stirrups are placed next.

with the masonry front and rear walls.

Because contractors in the St. Louis area were not familiar with RBM construction, alternate bids were taken on both the encased plate girder and RBM systems. All ten bidders indicated savings would be made with the RBM system.

The church contractor reports that total cost of the two girders and supporting columns was only $8,000; columns alone cost $600. The bid figures show two steel plate girders and four steel columns would have cost $8,200 without brick encasing.

The 65 ft RBM girders are 17 in. thick and just over 10 ft deep. The depth was dictated by the clerestory proportions. Six no. 9 and six no. 10 bottom bars were used for tensile reinforcing. Two no. 7 and two no. 8 bars provided top reinforcement for compression. And ten no. 4 stirrups were placed at each end of the girders for web stiffening.

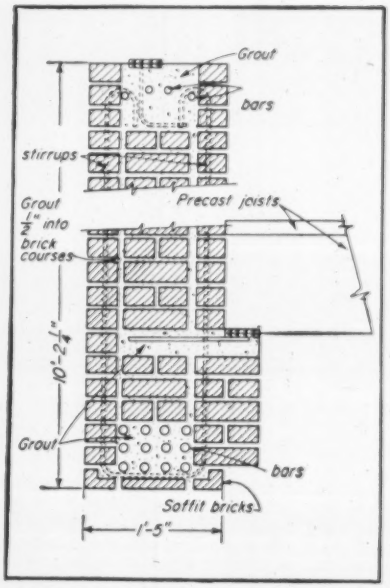
Brick mortar was a 1:1½:4½ cement-lime-sand mix. A 1:3 cement-sand mix was used for the grouting. Where the grout space was more than 2 in. wide, pea gravel was added to the grout to prevent shrinking. The only form needed was a work scaffold set to the bottom elevation of the girder. Soffit bricks were laid out first, with special corner brick turning up to form the lower edge of the haunches. Bottom steel was placed next. Stirrups were then added and tied near the tops for stability. After that it was just a matter of brick-grout-brick-grout in cycles of three or four courses.

• **Test loading successful**—A building permit was issued for the job with the provision that one of the girders be successfully test loaded after completion. The specification required a test load equal to the design dead load plus twice the live load, in accordance with Building Code Requirements for Reinforced Concrete of the American Concrete Institute.

Test loads of 67,500 lb were applied at each third point of one girder. This was in addition to the dead load of both the girder and the concrete roofs it supports. Pittsburgh Testing Laboratory performed the tests with calibrated hydraulic jacks through a fulcrum system.

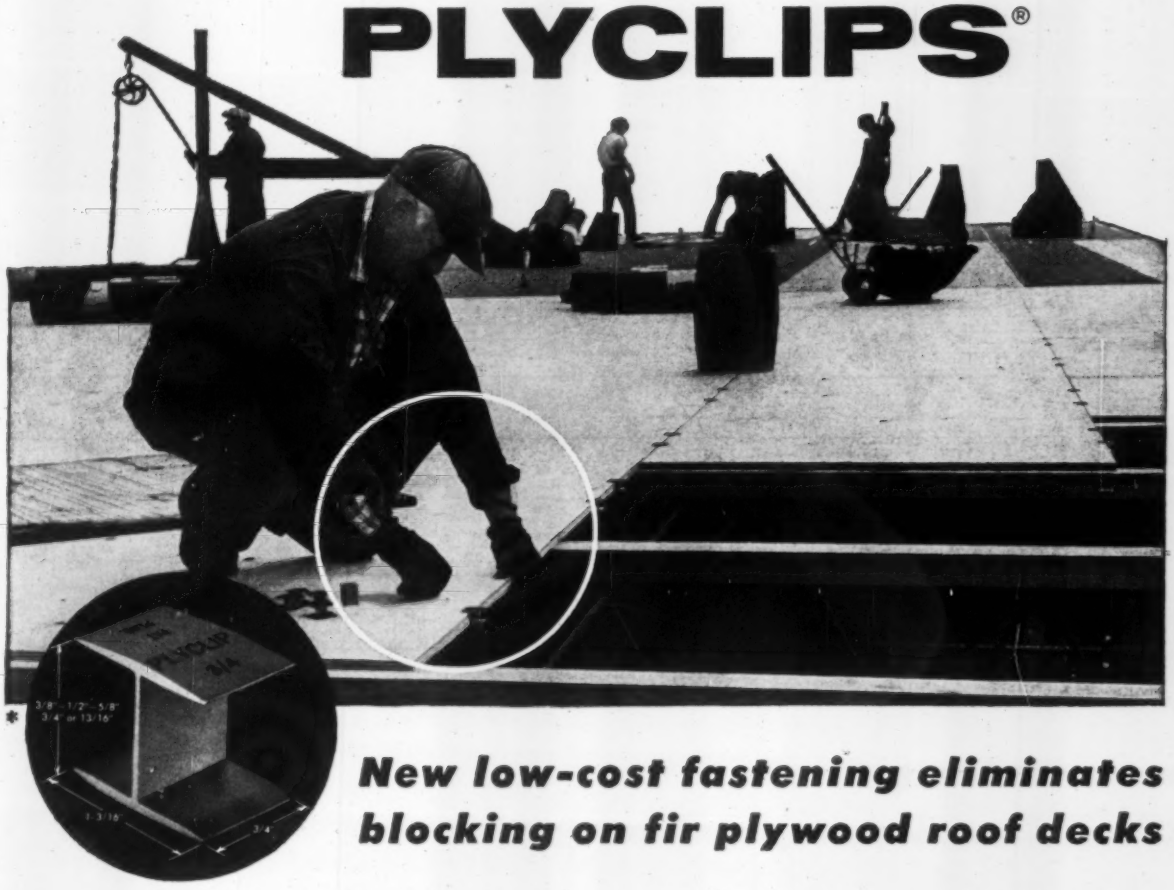
All deflection measurements checked out within required limits. After 24 hours under full load, maximum girder deflection was only half the amount allowed by the test provisions. Recovery after load release was in the neighborhood of 94%.

Architect for the church is J. T. Golabowski. The structural engineer is William A. Herman, of Smith-Hanlon-Zurheide-Levy, Inc. General and masonry contractor is C. Rallo Contracting Co., Inc. All are from St. Louis, Mo.



GIRDER is made of bars, grout and brick in design similar to reinforced concrete.

save time and money with PLYCLIPS®



New low-cost fastening eliminates blocking on fir plywood roof decks

HERE'S a simple new aluminum alloy fastening specially designed to parlay your savings on plywood roof decks.

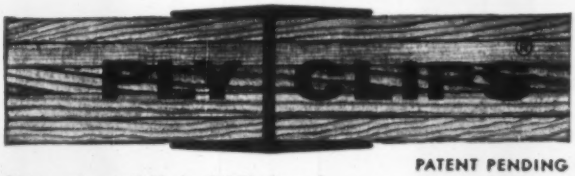
CUT COSTS—Plyclips replace blocking at only a fraction of the cost. Records on six different jobs—schools, warehouses, stores—show Plyclips save up to $49.00 per 1,000 sq. ft. of roof decking.

VERSATILE—Plyclips come in sizes for every standard plywood thickness and can be used for the heaviest roof loads. For typical industrial construction—¾" plywood over supports on 4 foot centers—only two Plyclips are needed for each span. Plyclips can also be used as premium construction where blocking is not normally required, i.e., ⅜" plywood on 24" rafter span.

STRUCTURALLY ADEQUATE—Douglas Fir Plywood Association laboratory tests show Plyclips are a satisfactory substitute for blocking in supporting plywood edges. Under a 250 lb. concentrated load applied at clip, difference in bending of the two panels is less than 1/16 inch.

SIZES, COSTS, AVAILABILITY—Plyclips come in sizes for all standard plywood thicknesses. Flanges are slightly tapered to ease fitting. Packed 500 to the box. Available nationally from wholesale distributors and retailers. Cost: about 3½ cents each.

STRONG / SAFE / EASY TO USE



PATENT PENDING

* Now—also available for 5/16" plywood

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Send samples and complete information about Plyclips, including test reports, and cost data on jobs where Plyclips have been used.

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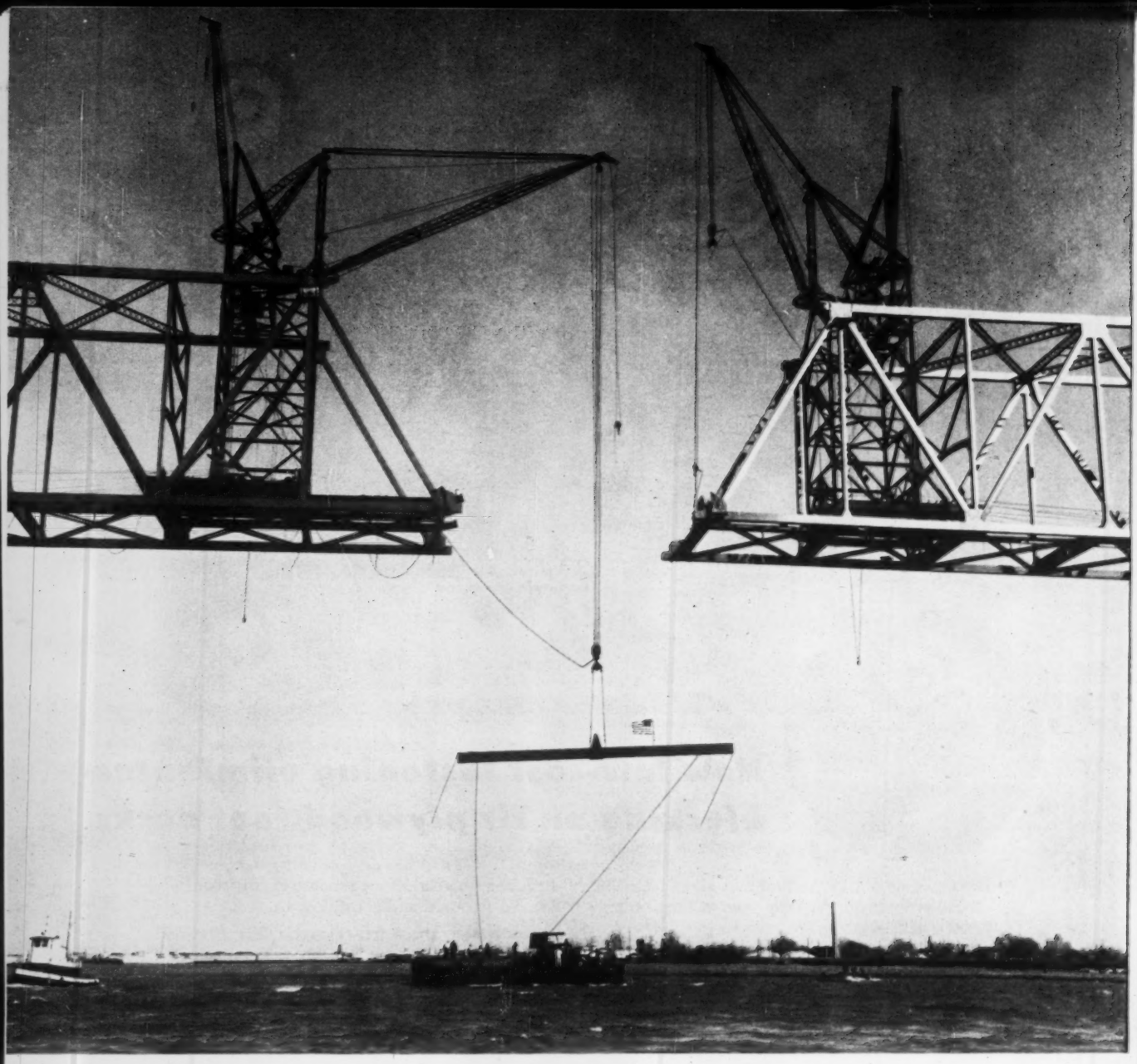


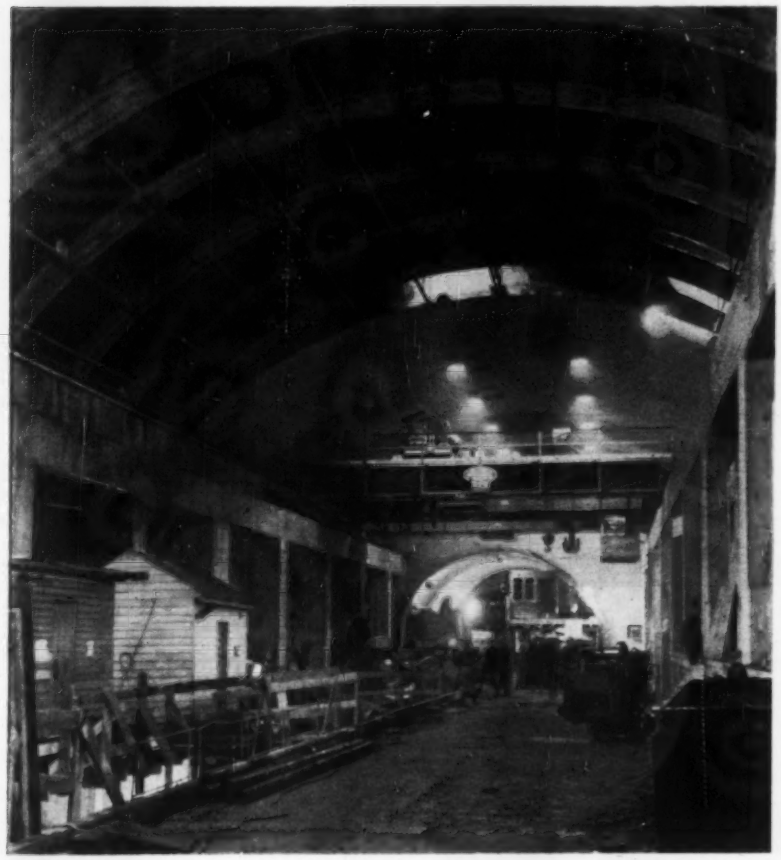
Nation's Longest Cantilever Span at New Orleans. It's said that a downtown bridge across Ol' Man River has been a cherished dream in New Orleans for more than a century. Now they have their bridge, a tremendous structure that links the City of New Orleans with Algiers, on the opposite bank of the Mississippi. Its center span is the longest and perhaps the most spectacular cantilever span in the country.

The picture shown here was taken early in 1958, when the history-making bridge was nearing completion. Scenes like this—with steel rope lifting and maneuvering heavy structural members—were part of the daily drama. Thousands of feet of husky Purple Strand, Bethlehem's finest wire rope, were used to speed the construction work, which at times required lifts of 90 tons or more.

Bethlehem Steel Company, Bethlehem, Pa. On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

Mill depots and distributors from coast to coast stock Bethlehem rope for the following industries and numerous others:

CONSTRUCTION • EXCAVATING • MINING • QUARRYING • PETROLEUM • LOGGING • MANUFACTURING



THIN SHELL CEILING catches water coming through powerhouse rock roof. Relieved design allowed smaller roof-support ribs. Rock between ribs is bolted.

Clever Design of Underground Roof

The overhead rock of T-1 underground powerhouse in the Australian Snowy-Mountains scheme is supported by curved reinforced concrete beams. Rock between the beam faces is held by roof bolts. This design permits the full flow of groundwater in the surrounding rock through the powerhouse roof. A continuous thin shell concrete arch below the main beams will catch the water and divert it into abutment drains.

An alternate design was to seal the roof against water flow. However, because of a particularly high head of groundwater in the area, a much more sturdy and expensive, roof framing structure would have been required.

The thin shell ceiling also protects equipment below from rock fragments if the roof bolts fail to hold. The machine hall is 59 ft wide, 111 ft high and 306 ft long. It was hewn out of jointed, medium-grained granite and a coarse-grained biotite granite. Arch-shaped concrete ribs rest on rock at spring line.

Extensive Great Lakes Survey Under Way

A survey group of U. S. and Canadian scientists, operating from a 400 ton Canadian Navy ship, has begun thousands of test borings in the Great Lakes to analyze bottom strata. Sampling of water is also being undertaken to gage pollution effects—primarily from the oil industry's gas wells.

The geophysical survey will provide valuable information to new lakeside industry expected as a result of the completion of the St. Lawrence Seaway next year.

Mainly Canadian sponsored, the $75,000-plus survey has some support from U. S. agencies.

In London . . .

1 Double-Decker Highway Is Britain's First

A double-decker highway—Britain's first—will be built to extend a mile and a half, bypassing traffic over a section of London's crowded streets. The upper level will be a part of the proposed London-South Wales freeway, with a direct connection to the London Airport provided by a spur road branching off from the freeway.

For the first mile of the route, the freeway will rest on single supporting piers with splayed heads directed at the center strip of the Great West Road, thereby allowing traffic to move freely along the divided highway beneath it as well as above. Where the two highways separate, the freeway, still in its viaduct, will swing northwest to pass over a large factory and then descend gradually to ground level.

Total length of the new road construction is some 12½ miles, including the one-mile airport spur. The entire route will be made of dual 24 ft highways with limited access.

Average height of the viaduct is to be about 25 ft, but it may rise as high as 65 ft in passing over the factory area at the western end. It is designed for use by all motor vehicles, except truck trailers carrying abnormal loads. But the viaduct will be designed to carry full standard loadings.

Local authorities will have the opportunity to comment on the proposal in a study prior to establishment of the exact line of the motor way. Sir Alexander Gibb & Partners, consulting engineers, has been named to draw up the plans.

2 Pedestrians Will Get Level of Their Own

Surface roads, pedestrian tunnels and sunken roadways are being stacked at a busy London traffic intersection. The four corners of the intersection will be connected by tunnels for people to avoid the more than 40,000 vehicles that pass through the intersection between 8 am and 8 pm.

The tunnels will sit over two 24 ft roadways passing under the intersecting road. And above the tunnels, to each side of the sunken roadways, will be 24 ft high-level lanes for turning traffic. Work on the underpass complex was started this spring. Cost will be $1.8 million. Design is by Rendel, Palmer & Tritton, London.

Low Cost Seen for Desalting Sea Water

The latest cost outlook for the leading salt water demineralization processes was given in a recent talk in Los Angeles by Sheppard T. Powell, Baltimore consulting engineer and noted authority in saline water conversion.

Mr. Powell compared the following general methods now under experimental study: Solar distillation, electric membrane, freezing and solvent extraction (ENR July 26, 1956, p. 70).

• **Solar stills**—The cost of solar distillation varies as it does with other processes. But it is believed that fresh water might be produced from sea water containing 35,000 parts per million of salt for as low as 50 cents per 1,000 gal. Present costs are more than $2 per 1,000 gal.

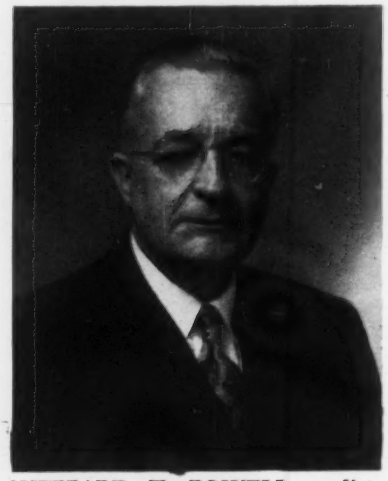
Solar stills are the simplest of the conversion equipment. Sea water to be evaporated is run into shallow compartments and the vapor produced by the sun's rays is condensed by a glass cover. The condensate, which is relatively free of dissolved salt solids, is collected in troughs.

• **Membrane process**—A large capacity electrodialysis system (3 mgd) in South Africa now converts brackish water from gold mining operations (4,000 ppm) to potable water containing 500 ppm of salt at a cost of about 29 cents per 1,000 gal. This is a low cost treatment, and if realized, should be of interest.

Conversion by electrodialysis is based on the removal of ions by passage of the water through electrically charged membranes. Although this process can convert sea water to fresh water, it is now uneconomical for such high salt contents. Future application of such processes may be more adapted to brackish supplies than to sea water, said Mr. Powell.

• **Freezing**—A recently developed freezing method is estimated to cost about $1 per 1,000 gal to produce 500 ppm fresh water from sea water. Comparing this figure with a predicted cost of $1 per 1,000 gal, or less, for distillation of sea water by multiple effect evaporators, indicates that further development of the freezing process may make it competitive with evaporators.

Research for desalting sea water by the freezing method is continuing and has promise of application under specific conditions. It has been developed to a stage that should warrant a pilot plant of small capacity within a year. The temperature of the saline water is lowered to form ice crystals that are subjected to successive washings with fresh water to remove entrained salts.

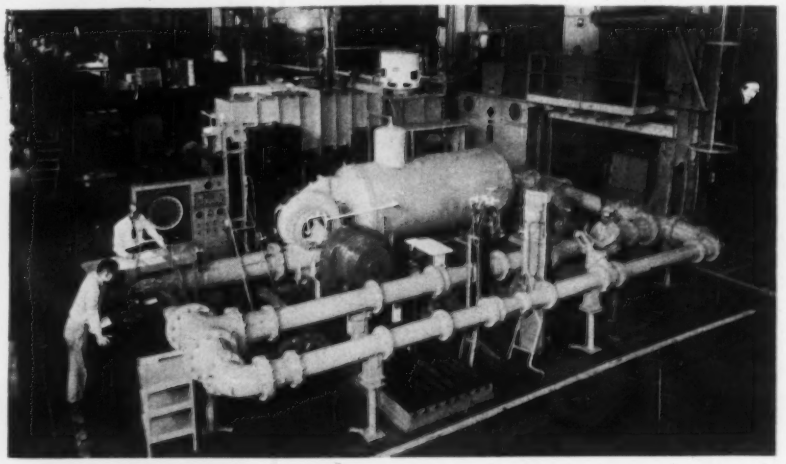


SHEPPARD T. POWELL predicts costs at 50 cents per 1,000 gal.

• **Distillation**—Relatively high capital and operating costs have showed widespread adoption of evaporators, which can be integrated with the generation of electric power by steam stations. Present cost of producing fresh water from sea varies from $2 to $3 per 1,000 gal without credit to power generated or other benefits. More research and ingenuity in design of equipment can reduce costs further, believes Mr. Powell. By using less costly metals for the special alloys and by controlling scale formation, the cost can be reduced to 50 to 60 cents per 1,000 gal.

Mr. Powell predicted a 50 cents per 1,000 gal cost now can be achieved for a 10 mgd plant employing the evaporation process. However, he didn't hold out much hope that distillation alone will provide fresh water at much less than 32 cents per 1,000 gal, or $100 per acre-ft.

Sheppard Powell's talk was given before the Water and Power Resources Committee of the Los Angeles Chamber of Commerce.



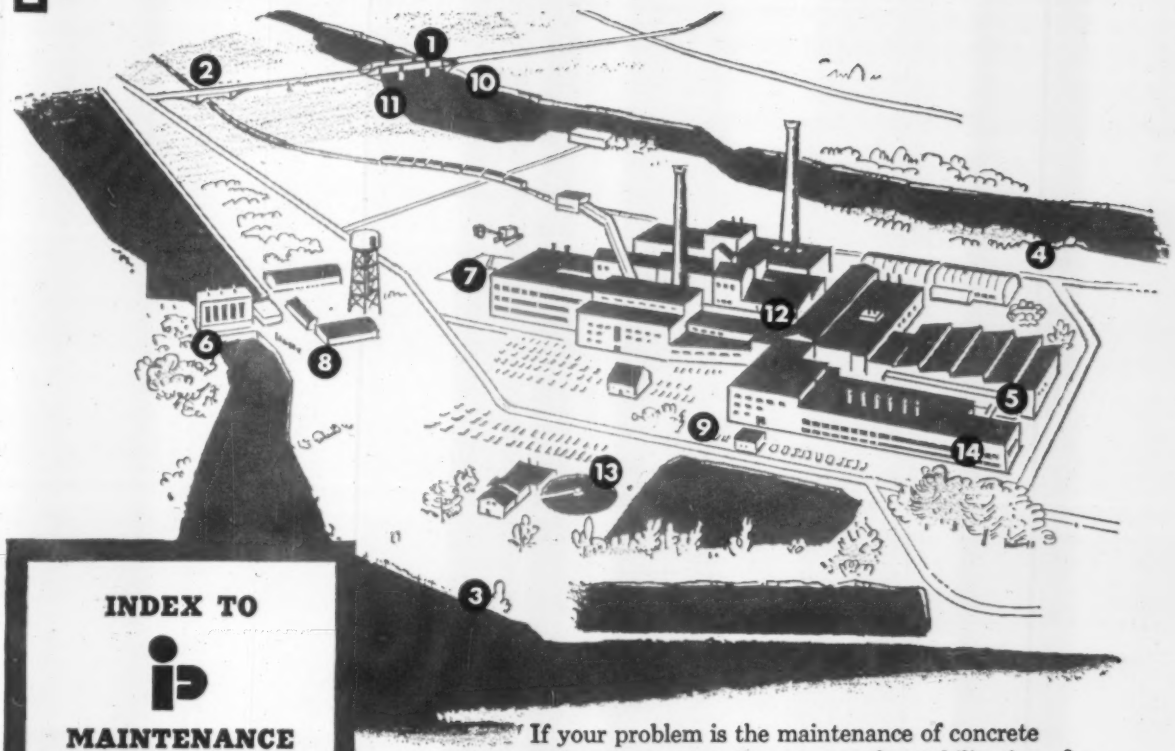
Mock-Up of Niagara's Pump-Turbine

A 14:1 model of a reversible pump-turbine is being used in design and construction of 12 full size pump-turbines for the Tuscarora powerhouse of the Niagara Power Project. Photo shows the model installation at Allis-Chalmers' West Allis works in Wisconsin.

The full size units will be rated to pump 3,400 cfs against 85 ft head and will develop 28,000 hp under 75 ft head as turbines.

The pump-turbines are being built jointly by A-C and S. Morgan Smith Co. under an $11 million contract.

maintenance and modernization services



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MAINTENANCE SERVICES

1. rehabilitating bridges
2. repairing lined and unlined tunnels
3. repairing seawalls, retaining walls, abutments
4. encasing deteriorated piles
5. stabilizing plant or machinery foundations
6. controlling leakage in dams and other hydraulic structures
7. placing bearing or cut-off piles **without vibration**
8. stabilizing poor bearing soils
9. sealing porous foundation material
10. grouting voids under piers, foundations, footings
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12. reducing settlement of bases or foundations
13. repairing deteriorated concrete or masonry structures
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To receive a technical bulletin on I-P Maintenance Services, send request on your letterhead.

If your problem is the maintenance of concrete and masonry structures . . . or the stabilization of foundations and soils, you can get real help from INTRUSION-PREPAKT, INC.

INTRUSION-PREPAKT provides a comprehensive combination of maintenance services and has specialized in these for many years. This experience plus the superior results achieved with I-P methods and materials gives you a realistic way to stretch your maintenance dollars.

By using INTRUSION-PREPAKT services, you can repair structures instead of rebuilding . . . strengthen existing structural members . . . work in difficult locations . . . solve problems not feasible by conventional methods—all with minimum or no production interruptions.

On your next maintenance or modernization project, why not investigate the many advantages of working with INTRUSION-PREPAKT? For information, write: INTRUSION-PREPAKT, Inc., Room 568-P, Union Commerce Bldg., Cleveland 14, Ohio. In Canada: Intrusion-Prepakt, Ltd., 159 Bay St., Toronto, Ontario.

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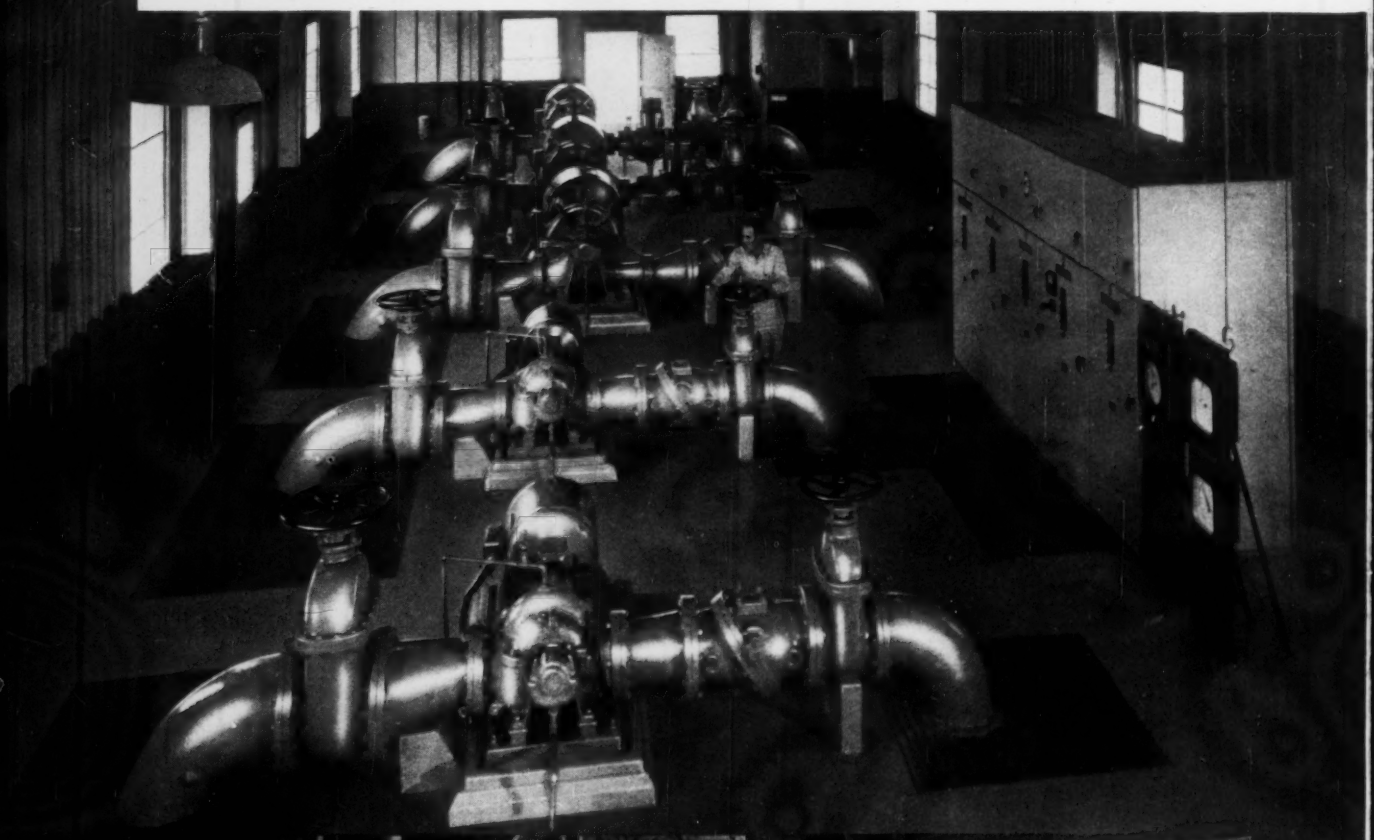
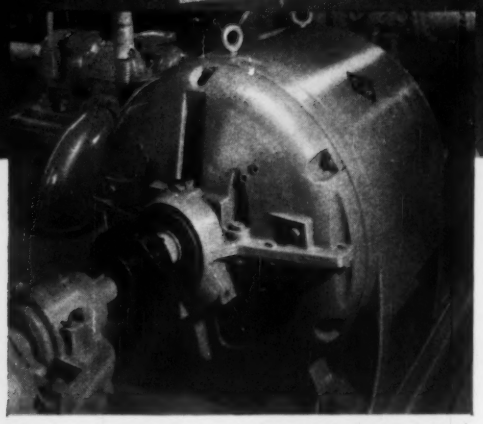
Allis-Chalmers equipment





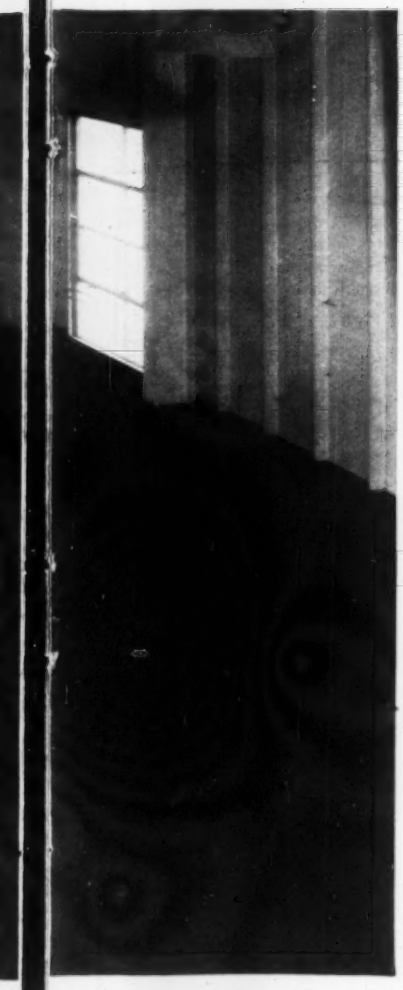
Motors—Sizes used range from 300 hp to 700 hp. There are also two 1000-hp and two 900-hp hollow-shaft motors.

Motor Control—A-C motor control was used throughout. Shown is one group of Allis-Chalmers high voltage starters.

A-C ALLIS CHALMERS

A-5787

powers gigantic



do-it-yourself WATER PROJECT

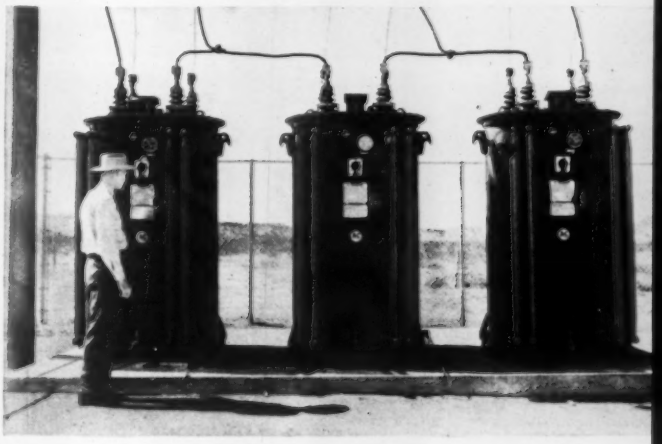
Water from man-made lake pumped to users in seven Texas counties

Down in Texas, where the unusual is commonplace, there's a man-made lake—with oil wells popping up from its surface! Texas—where oil flows like water, but flowing water is scarce — saw the creation of what is probably the world's largest do-it-yourself public works project. Lake J. B. Thomas was formed from the waters of the Colorado River, flooding an 8000-acre area.

The cities of Odessa, Big Spring and Snyder created a water district under State laws, and solved their serious water problem by the sale of revenue bonds, without any tax liability or Federal assistance. Ten billion gallons of water annually serve domestic and industrial customers and three oil well repressuring operations spread over seven counties.

More than 200 pieces of Allis-Chalmers equipment — motors, pumps, control and transformers—pump 36 million gallons of water daily through the two main pumping stations and booster stations along the 111 miles of pipelines. Multi-product engineering skills, normally calling for several manufacturers, are thus conveniently obtained from a single source.

Many progressive cities are benefiting from Allis-Chalmers range of products and all-around public works experience. *Your* city can, too. Call your nearest A-C office, or write Allis-Chalmers, General Products Division, Milwaukee 1, Wis.

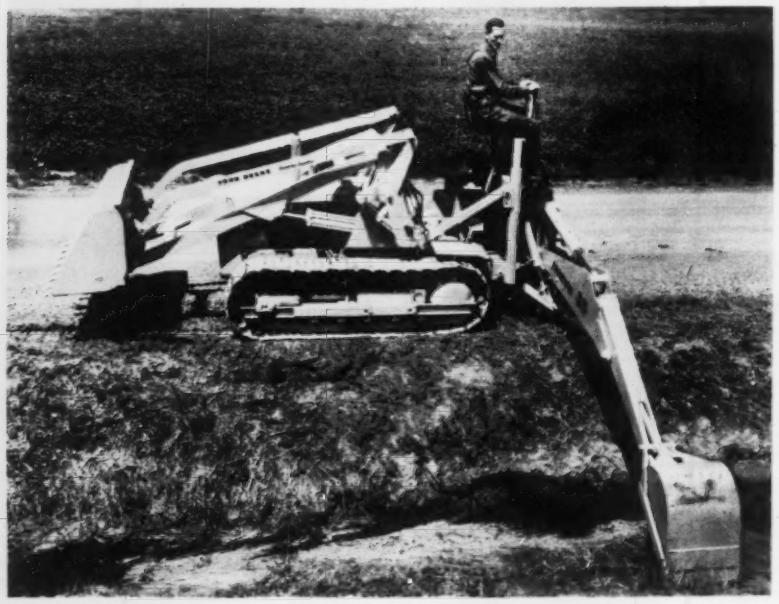


Pumps—Twenty-two pumps of various sizes are located at main pumping stations and booster stations along the 111-mile pipeline.

Transformers — 132 transformers, ranging in all sizes, distribute the power necessary to operate the equipment.

Allis-Chalmers public works equipment — Motor-generators, pumps, compressors, condensers, blowers, hydraulic turbines and generators, motors, transformers, switchgear, butterfly valves, diesel engines.

ALLIS-CHALMERS



Backhoe Designed for Fast Operator

What the manufacturer calls "the first backhoe design for the fast operator" has been tested and cleared by John Deere for use on its 440-I tractor along with its loader or crawler.

The Shawnee 88 features a clean design with all hoses and cylinders covered and protected. A simplified hydraulic system eliminates extra bypass valves and reduces the need for adjustments. There is a 180 deg uninterrupted swing with automatic wear compensation.

One quick-detach bucket, activated by a hidden cylinder, handles all jobs from square hole digging to truck loading. SHAWNEE MANUFACTURING CO., INC., 1947 TOPEKA AVE., TOPEKA, KAN.

Vacuum Cleaner for Jet Runways

First production shipments of a giant vacuum cleaner for jet runway maintenance are going to the U. S. Air Force. The 11 ft high, 30½ ft long cleaner is said to sweep 1 million sq ft of runway, taxiway and ramp space in an hour. Street cleaning is another application being considered for the machine.

Two engines supply mobile power and drive the vacuum equipment. An 8 ft wide suction nozzle can be raised two feet to avoid obstructions during turning. The 15,000 lb vehicle has six forward and one reverse speed, and is capable of 25 mph while cleaning and 35 mph while en route to and from areas. CONSOLIDATED DIESEL ELECTRIC CORP., STAMFORD, CONN.

Submersible Pump Design Features "Open Impeller"

Fairbanks-Morse has introduced an open impeller type submersible pump that will fit 4 in. dia well casings. It comes in four sizes: 1½ hp, 7-stage; 2 hp 9-stage; 3 hp, 13-stage and 5 hp, 20-stage. The pump is made of pomoloy, a close-grained, high tensile cast iron, to give greater resistance to corrosion.

Positive power application is assured by use of a splined coupling between pump and motor. All water passages through the bowls are porcelain enameled to provide a smooth path, reducing friction. The pumps are water-cooled and water lubricated. FAIRBANKS-MORSE & CO., 600 S. MICHIGAN AVE., CHICAGO, ILL.

Heavy-Duty Transmission Features Compact Design

A heavy duty industrial transmission for use on lift trucks, front-end loaders and other materials-handling equipment has been developed to feature compact design, new handling ease and improved performance.

For use with either gasoline or diesel engines, the new transmissions combine features of the torque converter and fluid coupling with the added advantage of power shifting in either of two speeds for forward and reversing operations. The torque converters further supply heavy torque by driving through low or high speed transmission gears. And because of hydraulic shifting there are no gear-shifting delays.

With the new transmission an operator can accurately "inch" a lift truck into exact position and, at the same time, maintain full engine power needed to lift loads at top speeds. Thus, fast or slow movement with full positive control and full power can be had. BORG-WARNER CORP., 200 S. MICHIGAN AVE., CHICAGO 4, ILL.

Horizontal Split-Case Pump —A New Line Now Available

A horizontal split-case single-stage, centrifugal pump—known as Type S—has been announced. It features quiet operation, compact over-all dimensions, prelubricated bearings, and ceramic mechanical seals.

The pump is suitable as a booster to increase city water pressure, and for pneumatic water systems, refrigeration and heating. CHICAGO PUMP CO., 622 DIVERSEY PARKWAY, CHICAGO 14, ILL.

Tractor-Scraper Provides Faster Loading

For tractors of 70 hp or more, a scraper model for faster, easier loading has been designed with 11.5 cu yd capacity and designated the DT Full-pak Model.

Manufacturers claim the new model has a cleaner smooth bowl interior that cuts down resistance in loading and unloading. The bowl floor, providing about 28 sq ft of load base, measures 40 in. from the tip edge of the cutting blade to the base of the tail gate, so that the material does not have to travel as far to get into the bowl. During loading, the scraper bottom remains nearly flat so the material need not be forced uphill. The blade measures 8 ft 4 in., is in three sections, and is angled precisely with the floor of the bowl to reduce loading resistance.

The scraper is extremely maneuverable—with an over-all length of nearly 29 ft, it requires less than 26 ft of width to make a complete 180 deg turn.

List price of the unit is $9,400 F.O.B. Peoria, with immediate shipment available. LeTourneau-Westinghouse Co., Peoria, Ill.

Fused Silica Looks Like Good Insulation

A new acid-resistant material called Foamsil offers insulating protection and withstands thermal shock between −450 and +2200F. An extreme test of the 99% foamed, silica board with 6,000F heat from a oxy-acetylene torch only fuses the surface of the board and doesn't seem to transmit heat through the material. It cannot oxidize or absorb moisture.

The structure is of completely closed silica cells. It's unaffected by all acids, except hydrofluoric and hot phosphoric. This indicates good performance as a tank and pipe liner for hot acids in any concentration. The sealed cells prevent absorption, which assures continuous full insulating value. It also prevents the material from acting as a wick. There isn't any fire hazard as a result.

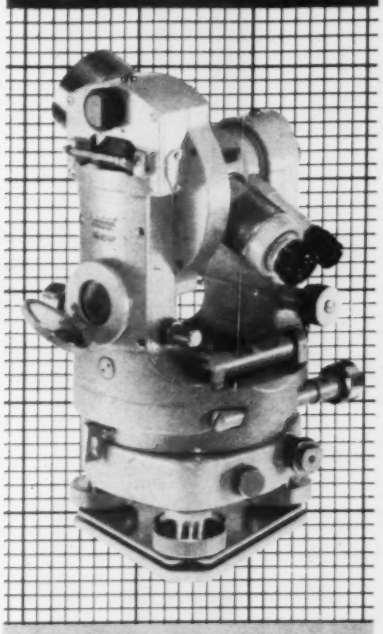
Foamsil weighs only 10 to 12 lbs per cu ft but has a compressive strength of 130 to 210 psi. This allows its unsupported use in such places as high stack linings.

Foamsil is being produced in quantity at Sedalia, Missouri in a continuous horizontal furnace designed for the new product.

Commercially available blocks 11 in. x 17 in. and 17 in. x 22 in. come in thicknesses up to 3 in. Cost is 50 cents a board foot. Pittsburgh Corning Corp., One Gateway Center, Pittsburgh 22, Pa.

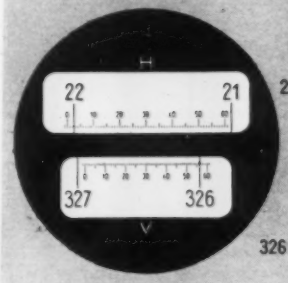
Fennel

UNIVERSAL THEODOLITE FT I



Both circles can be read simultaneously

Readings direct to one minute



Horizontal circle 22° 2′ 36″

Vertical circle 326° 56′ 24″

Easy estimation to 6 seconds — no vernier computations necessary. Built-in optical plummet. Independent conical centers.

For more information on

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Glenn Given Top Post In Sanitary Commission

Thomas R. Glenn, Jr., has been appointed director and chief engineer of the Interstate Sanitation Commission, which operates under a compact among the states of New York, New Jersey and Connecticut to abate pollution in New York harbor. He fills the vacancy caused by the death of Seth G. Hess, who has held the position for 21 years.

Mr. Glenn has been assistant chief engineer with the Commission for two years. Earlier he was a professor of sanitary engineering at Rutgers University.

Ledermann, King Join Homebuilders' Group

Robert C. Ledermann is the new director of the community facilities and urban renewal department of the National Association of Home Builders. The organization also named John M. King, architect-engineer, as assistant director of its Research Institute to help meet expanding activities.

Mr. Ledermann succeeds Frederick E. Wegner who left to become deputy commissioner of licenses for Philadelphia.

Mr. Ledermann was an account executive since 1955 with Larry Smith & Co., Washington, D. C., real estate developers. He advised developers, planning agencies, and corporations on problems of property development.

Mr. King formerly was assistant head of research and development for National Homes Corp. of Lafayette, Ind. He also had served as City Planning Director for Merced, Calif.

Herbert Fischbach Heads Fischbach & Moore

Election of Herbert Fischbach as president of Fischbach & Moore, Inc., New York City electrical contracting firm, has been announced by Henry F. Fischbach, chairman of the board.

The new president will retain his position as chairman of the board of the New York City reality firm of Herbert Charles & Co., Inc.

Noble's Job Made Official At State Senate Session

Charles M. Noble, at a special session of the Ohio Senate, has been formally approved as Director of Highways.

Mr. Noble had been serving as a $30,000-a-year secretary to the governor since coming to Ohio in January, 1957, at the request of Gov. William O'Neill. It was understood that Mr. Noble was to head the State Highway Department but because of a constitutional provision that top state officials must be registered Ohio voters, he could not be given the official title of his post until he had completed his residence requirement.

M. Allen Pond Becomes Assistant Surgeon General

M. Allen Pond has been promoted to the rank of assistant surgeon general in the U.S. Public Health Service, a rank equivalent to brigadier general.

He is the second PHS office to receive this rank recently, joining Taft Sanitary Engineering Center head Harry Hanson. For a long time, PHS' Mark Hollis had been the only sanitary engineer in active service holding gold star rank.

Mr. Pond is a special assistant to the Secretary of Health, Education and Welfare.

Gabell Gwathmey Joins San Francisco Firm

Gabell Gwathmey has joined the San Francisco architectural firm of Masten & Hurd as a principal. He recently retired as director of the Department of Licenses and Inspections of the District of Columbia, which is responsible for enforcing the zoning, building and housing laws of the national capital.

A past president of the San Francisco Post, Society of American Military Engineers, he served for more than 20 years with the Corps of Engineers in the design and construction of military projects and civil works in the U.S. and overseas.

Lattin Now Vice President Of Foster Wheeler Corp.

The election of Clark P. Lattin, Jr., as vice president and general manager of the Process Plants Division has been announced by Foster Wheeler Corp., New York City. He formerly was manager of sales for the division, which designs, fabricates, constructs plants for oil refineries and chemical production.

A graduate of the University of Delaware, Mr. Lattin has been with Foster Wheeler since 1938, first as a design engineer, later as manager of the Boston sales office and finally as assistant to the vice president in charge of sales.

Careers

Business

Don H. Mooney has been named assistant manager of sales for U. S. Steel Corp., Philadedphia. He succeeds **Alvin H. Burrows,** now manager of sales at Indianapolis.

J. Stewart Baker, Jr., a vice president of Chase Manhattan Bank, has been elected a director of Alpha Portland Cement Co., Easton, Pa.

James H. Curtis, president and a director of Chemical Construction Corp., has been elected a director of the parent firm, Electric Bond and Share Co., New York City.

Stephen T. Kraft has been appointed superintendent of construction for Great Lakes Steel Corp. He previously was manager of maintenance in Ford Motor Co.'s steel division.

David H. Boyd, Pittsburgh, has been named president of United States Steel Homes Division of United States Steel Corp. The homes division is headquartered at Albany, Ind.

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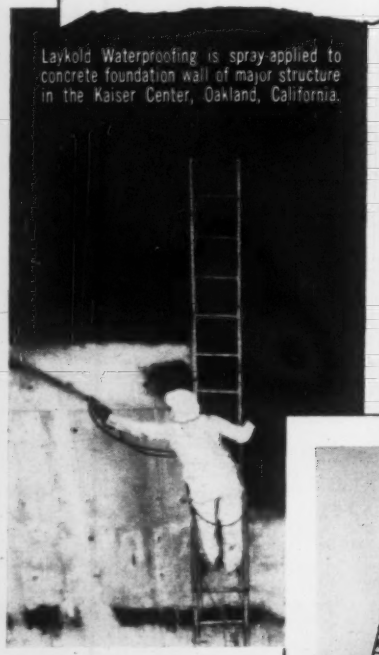

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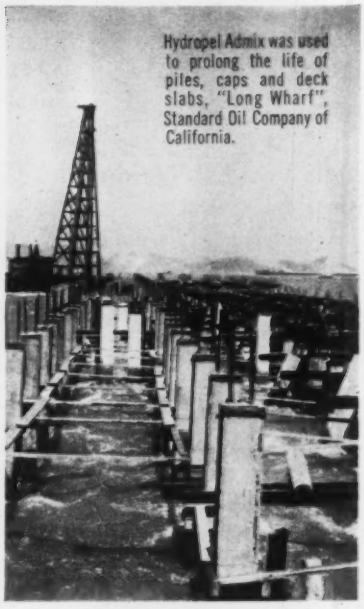

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Obituaries

John A. Polhemus, 43, well-known northeastern sales manager for the Euclid Division of General Motors, in Dover Plains, N. Y. He was formerly a job superintendent with Walsh Construction Co. and Johnson, Drake & Piper, Inc. Mr. Polhemus was president of the Dover Plains Board of Education.

Talcott W. Moore, 65, retired coordinating engineer of the Wyoming State Highway Department. Prior to his retirement, he spent 35 years with the department.

Robert C. Wilson, 75, former chairman of the board of directors of Turner Construction Co., New York City. He graduated from Columbia University School of Mines in 1905 and began work with Turner as an engineer in 1907. After serving as general manager of the Atlantic office, he was elected director of the company, in 1928. In 1933 he was made a vice president and in 1947 became chairman of the board.

J. H. Leveck, 91, founder of the oldest general contracting company in Arkansas. The company's first contract was awarded in 1904.

Edward D. Elias, 82, a retired partner in Tri-States Construction Co. of North Little Rock, Ark.

Earl North, 75, retired Corps of Engineers colonel, in Jacksonville, Fla. From 1931 to 1935 he was staff officer in the office of the Secretary of War in Washington, D. C., and from 1935 to 1938 he was district engineer at Jacksonville.

William H. Schuchardt, 83, city planner, educator and architect. A graduate of Cornell University, he set up his own architectural firm in Milwaukee in 1904. He served as chairman of the Milwaukee Land Commission from 1920 through 1925 then joined the staff at Cornell as head of the regional and city planning department of the College of Architecture. Establishing a reputation as a city planner and pioneer proponent of zoning, he moved to Los Angeles in 1930 and was chairman of the city's planning commission for several years.

J. Frisbie Sanders, 64, former Louisville architect. He moved to Albany, N. Y., in 1929 and later became head of design for all public buildings for New York State.

Errors in Bidding

Right to withdraw bid or cancel bond denied

A Pennsylvania court has ruled that a contractor who makes an error in his bid through negligence is bound by his bid if the other party is unaware of the mistake. The bid cannot be withdrawn nor the bid bond be canceled.

The contractor's troubles started when the County of Allegheny advertised for bids for construction of a sewage disposal plant at the Greater Pittsburgh Airport.

A. J. Colella, Inc., submitted its sealed bid and its bid bond in the sum of $17,500. When the bids were opened, Colella's bid was in the amount of $144,900 and the next two lowest bidders were in the amount, respectively, of $218,995 and $233,000. Colella was determined to have been the lowest bidder and he was requested to enter into the contract to perform the work in accordance to the plans and specifications. On July 5, 1950, Colella notified the county that it had made a clerical mistake in computing the amount of the bid and requested the return of the bid bond. This notice was given before he was notified that the contract had been awarded to him. The county refused to return the bid bond, and upon Colella's refusal to enter into the contract the county re-advertised for bids for the job and awarded the contract to another contractor for the sum of $214,000.

Colella brought an action to cancel the bid bond. The county counterclaimed for $69,100, the difference between the bid submitted by Colella and the amount for which it later contracted for the performance of the work. The trial court found as a fact that the mistake in the bid was unilateral and was the result of negligence on the part of the contractor and that the county was not aware of, nor did it have any knowledge of any clerical mistake in Colella's bid and that under such circumstances, it could not withdraw its bid or cancel its bid bond.

Another issue was the amount the county was entitled to recover as damages. The court limited the damages to the sum of $17,500, the amount of the bid bond that was considered as liquidated damages for refusing to enter into the contract. This conclusion was reached because the invitation to bidders provided that upon the execution of the contract, the contractor would also have to furnish a performance bond. Both parties appealed from the judgment of the trial court but the judgment was affirmed on appeal.[1]

The appellate court stated: "If a person, firm or corporation submits a sealed bid on public works, the principle contended for by the contractor, namely, that after all the bids are opened he can withdraw his bid under the plea of a clerical mistake, would seriously undermine and make the requirement or system of sealed bids a mockery; it could likewise open wide the door to fraud and collusion between contractors and or between the contractors and the Public Authority. What is the use or purpose of a sealed bid if the bidder does not have to be bound by what he submits under seal? What is the use or purpose of requiring a surety bond as further protection for the public, i.e. the municipality, if a bidder can withdraw his bid under plea of clerical mistake, whenever he sees that his bid is low and that he must have made an error in judgment?"

The contractor, in support of his claim to the right withdraw his bid, quotes from Pomeroy's Equity Jurisdiction, Fifth Edition, 1941, Volume 111, Section 870(a), at page 388, as follows: "However, equitable relief by way of rescission may be given if the mistake relates to a material feature of the contract; if it is of such grave consequence that enforcement of the contract as made will be unconscionable, if it occurred notwithstanding the exercise of ordinary diligence by the party making the mistake, and if the other party can be put in status quo, equity will grant relief." The court held that the latter two conditions did not exist in the instant case.

"Notwithstanding the fact that there is a split of authority among the courts of our sister states on the issue here involved," the court observed, "we are convinced that it would be contrary to the public interest to permit a bidder to withdraw or cancel his bid under the circumstances of this case."

As has been indicated, in some states, the contractor under the circumstances involved in this case would be permitted to withdraw his bid. As to the statement in the court's opinion that the county had no knowledge of the mistake in the bid, it would appear that the discrepancy between the amount of the low bidder and the next low bidder was so large that the county could be charged with knowledge of the mistake in the bid.

(1) A. J. Colella, Inc. v. County of Allegheny, 137 A. 2d 265, Supreme Court of Pa., January 8, 1958.

Contractor Held Liable For Latent Defects

Acceptance of a new house and payment in full to the contractor is not a waiver of damages for latent defects in the construction work. Measure of damages depends on the nature and extent of the defects.

Both phases of the problem are discussed by a Texas court in a case started by a homeowner against the contractor for defects in the house.

The contractor, in his defense, claimed that when the owner applied for a mortgage, he signed a statement to the effect that the house had been constructed in a satisfactory manner, that the owner had taken possession of the house and had paid the contractor in full and that such acts constituted a waiver of any claim that the owner might have for defective performance.

Since the defects in the work were latent and did not appear until some time after the owner took possession of and occupied the house, such conduct did not estop the owner from recovering damages for defective performance. The trial court granted judgment to the owner and this was affirmed on appeal.[1]

A dispute arose as to the measure of damages. On this point, the appelate court said: "The rule of damage in building contract cases is that if the defects which constitute the breach can be remedied, without impairing the building as a whole, the measure of damages is the reasonable cost of remedying such defects, but if such defects cannot be remedied without injury to the structural efficiency of the building as a whole, the measure is the difference in value had it been constructed according to contract. McBurnett v. Smith & McCallin, Tex. Civ. App., 286 S.W. 599; Totten v. Houghton, Tex. Civ. App., 2 S.W. 2d 530; Hutson v. Chambless, Tex. Civ. App., 295 S.W. 723; Tucker v. Northcutt, Tex. Civ. App., 248 S.W. 750."

(1) Loggins v. Gates, 301 S.W. 2nd 525, Court of Civil Appeals of Texas, May 9, 1957.

These summaries of court decisions are prepared by I. Vernon Werbin, Esq., New York attorney and licensed professional engineer, who is author of the following books published by McGraw-Hill Book Company, Inc.: *Legal Phases of Construction Contracts; Legal Guide for Contractors, Architects and Engineers;* and *Legal Cases for Contractors, Architects and Engineers.*

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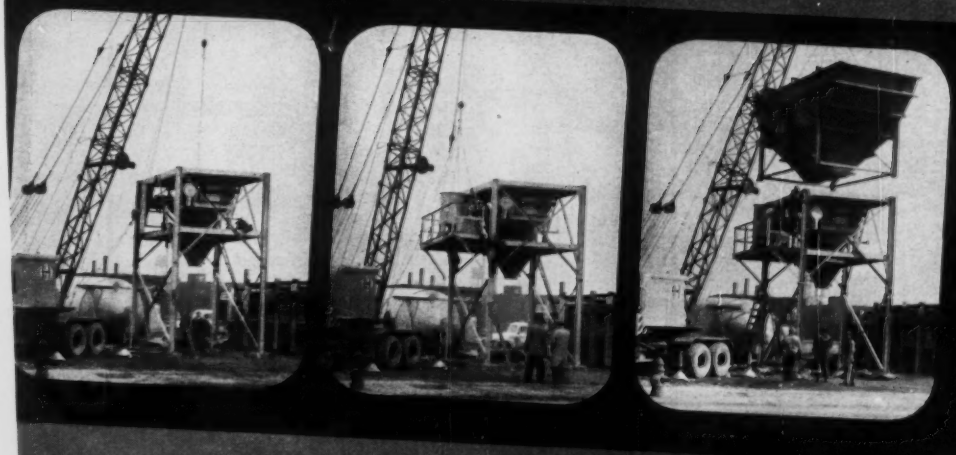
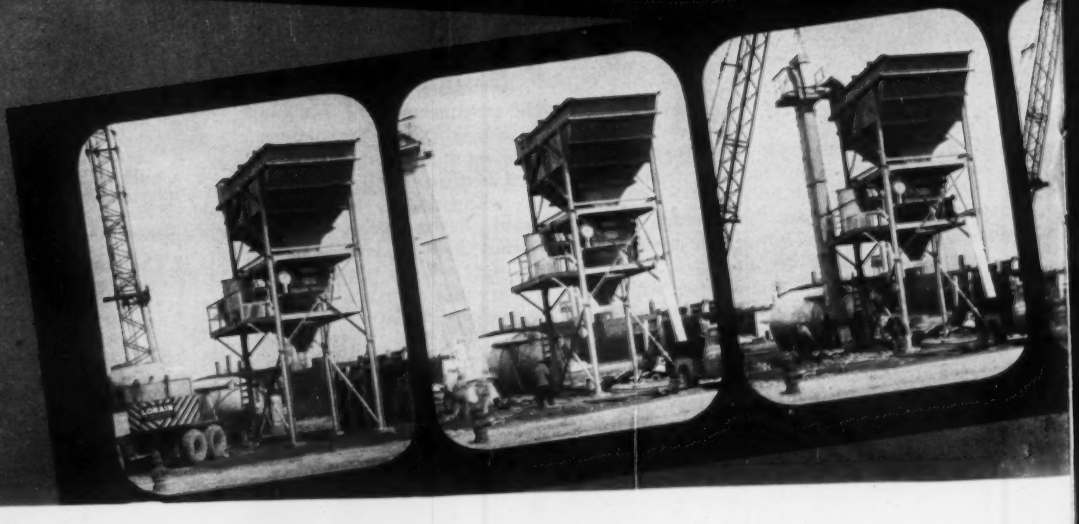
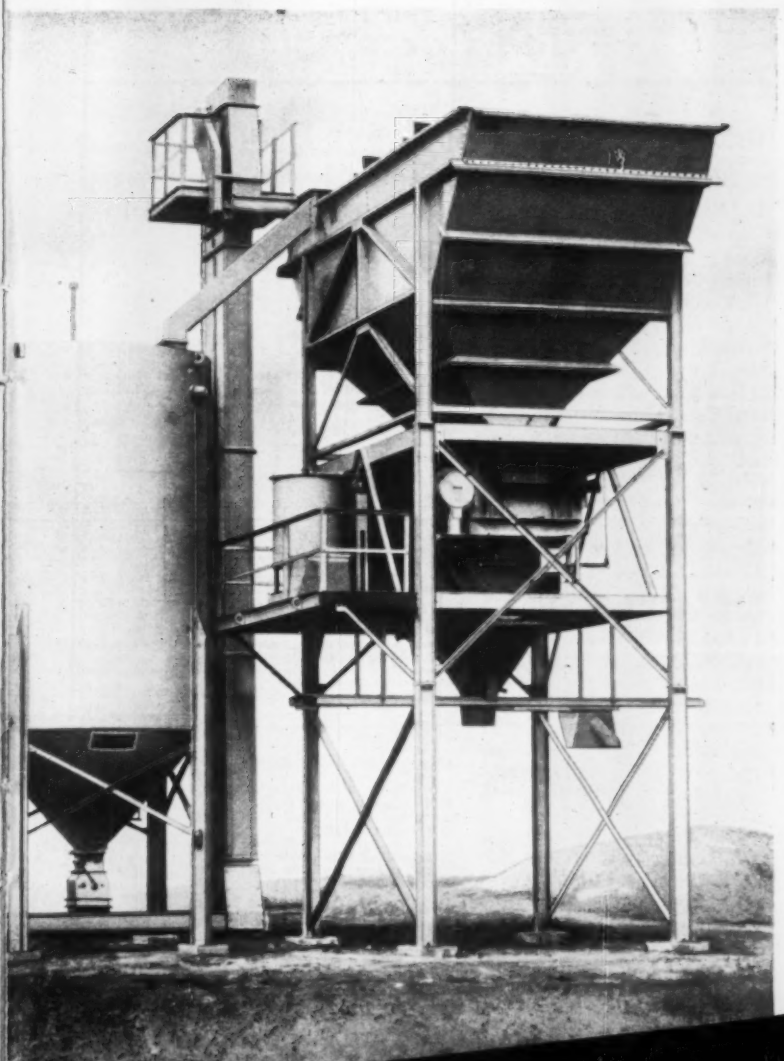


The eight photos in this strip give you the reason so many highway contractors are specifying Heltzel Unitized Batching Plants . . . speed and simplicity of set-up and dismantling.





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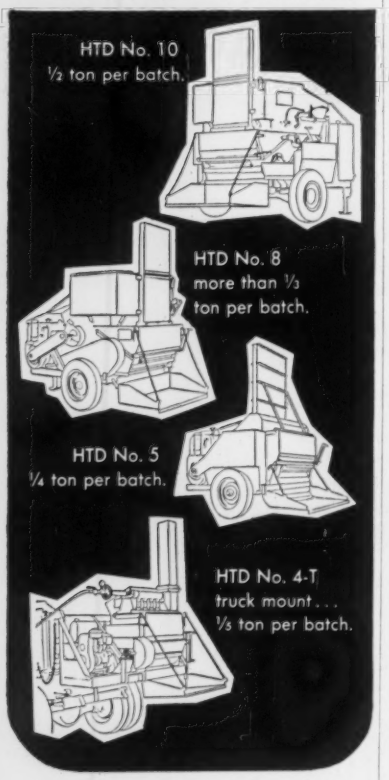

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Flaming Gorge Dam and Power Plant, Utah

$30,000,000 award hinged on low bid for first 500,000 cu yd of concrete for thin arch dam

Unit prices seesawed in the bidding for the Flaming Gorge Dam and powerplant on the Green River in Utah. The Bureau of Reclamation's Flaming Gorge Unit at Manila, Utah, awarded the $29,602,497 contract to The Arch Dam Constructors, a joint venture of Peter Kiewit Sons Co., Morrison Knudsen Co., Mid-Valley Utilities Co. and Coker Construction Co., operating out of Omaha, Neb. Jean R. Walton is USBR project engineer.

Arch Dam was low at $14.50 a cu yd for the first 500,000 cu yd of concrete for the dam, which accounts for 24.5% of the contract. Other prices ranged from $17.89 to $35 a cu yd. However, Arch Dam's bid of $14.50 a yd for the remaining 422,000 cu yd of concrete for the dam, was $2 above the low bid for this item, prices on which ranged from $12.50 to $18 a cu yd.

The dam, rising 490 ft above bedrock, will be seventh highest concrete dam in U. S. Design is a thin arch with maximum thickness of 150 ft. Crest length is 1,180 ft and crest elevation 6,047 ft (ENR June 19, 1958 (p. 26).

Good aggregate sources are scarce in this area, which is predominantly shale. Source recommended to the contractor has about 20% rock with less than 2.5 specific gravity. This light rock has to be removed by a heavy media separation process.

Prevailing wages on the job include: carpenters, $2.975; ironworkers, $3.125; electricians, $3.275; common laborers, $2.10.

1C	The Arch Dam Constrs., Omaha, Neb	$29,602,497
2	Guy F. Atkinson Co.; American Pipe & Constr. Co.; The Arundel Corp; L. E. Dixon Co.; The Hunkin-Conkey Constr. Co., San Francisco, Cal	31,754,912
7	Merritt-Chapman & Scott Corp., NYC	50,241,795
EE	U. S. Bureau of Reclamation, Manila, Utah	25,889,667

Bids: 6-10-58 Items	Unit	Quantity	Unit Prices 1C	2
Part A				
Diversn & c/o riv dur constr & unwatering fndns	ls	job	$508,047	$985,000
Clear reservoir areas	ls	job	35,000	21,000
Remov unstable boulders from canyon walls	cy	7,000	20.00	5.00
Exc in open cut, dam, PP & appurt wks, common	cy	106,000	5.50	3.50
rock, 1st 100,000 cy	cy	100,000	5.50	11.80
over 100,000 cy	cy	90,000	5.50	3.50
all classes, divrsn tunn	cy	12,500	4.00	4.00
Exc, all classes, tunn in shale seams	cy	750	50.00	25.00
switchyard	cy	48,000	4.00	1.10
diversion tunnel	cy	23,500	17.00	32.00
spillway tunnel	cy	11,500	23.00	30.00
control cable tunnel	cy	450	32.00	61.50
Line holes for rock exc, dr	lf	21,000	1.00	0.85
Struct stl tunn supp f&p	lb	790,000	0.15	0.32
Tunn roof supp bolts f&i	lf	4,500	2.75	4.00
ch lk fab f&i	sy	800	3.25	3.00
Timber lag, dvrsn tunn f&i	Mbm	14	300.00	250.00
Backfill	cy	4,500	2.80	3.50
compact	cy	7,000	3.00	3.75
Riprap	cy	1,850	$4.00	$5.00
sand & gr or cr rock bed	cy	260	3.00	7.00
Switchyd embanks, compact	cy	38,000	0.30	0.22
Exc, all classes, trenches for WS & sewer lines	cy	60	20.00	15.00
Bkfl in trenches for WS & sewer lines	cy	60	7.00	4.00
compact	cy	60	0.50	5.00
Core drill NX holes in stage bet 0–50'	lf	250	8.80	6.00
50–100'	lf	250	9.40	6.00
100–200'	lf	500	10.50	6.00
5½" holes, to 50' depth	lf	200	13.50	38.00
Drill grt holes in stages bet 0–30'	lf	20,500	1.65	2.25
30–60'	lf	11,500	1.75	2.25
60–110'	lf	12,000	1.85	2.25
110–160'	lf	6,500	2.00	2.25
160–210'	lf	1,050	2.10	2.25
210–260'	lf	100	2.20	2.25
Met pipe & ftgs for fndn grtg & drainage f&p	lb	48,000	1.00	0.55
Hookups to fndn & tunn grt holes	ea	800	16.50	12.00
to contr jts grtg systs	ea	300	25.00	50.00
Pres. grtg fndn & tunnels	sax	52,000	2.75	2.00
contr jts & coolg systs	sax	8,500	3.75	7.00
Met tubg & ftgs for grtg contr jts f&i	lb	126,000	1.25	0.90
Drill drain holes in stages bet 0–25'	lf	4,500	4.40	6.00
25–50'	lf	4,350	4.60	6.00
50–75'	lf	3,500	5.00	6.00
75–100'	lf	1,600	5.25	6.00
100–150'	lf	400	5.50	7.00
SP drain w open jts, 8" c	lf	210	4.00	3.20
split, w cmt jts c	lf	125	4.40	2.20
w calked jts, 8" f&l	lf	80	3.25	9.50
Drill holes for anchor & grtg bars in place	lf	5,300	1.50	2.20
Cmt for dam & appurt works f&h	bbl	600,000	4.75	4.80
sacked, fndn grtg f&h	sax	52,000	1.25	1.40
spec, grtg contr jts f&h	sax	8,500	1.25	2.00
Pozzolan f&h	sax	42,000	13.00	4.52
Conc surf, spec finish	sy	630	20.00	18.00
Reinforcement bars f&p	lb	4,400,000	0.18	0.165
Conc in dam, 1st 500M cy	cy	500,000	14.50	22.05
over 500M cy	cy	422,000	14.50	14.04
in cutoffs in shale seams	cy	750	30.00	12.00
crane siding & parking area	cy	900	60.00	46.00
sidew & parapets	cy	400	80.00	80.00
rdwy cantilevers	cy	1,500	50.00	50.00
elevator tower	cy	360	200.00	150.00
gate hoist & stem storage platf	cy	30	100.00	90.00
trashrack & gatehouse structs	cy	3,400	110.00	120.00
ring follower gate chamb, 2nd stage	cy	130	65.00	30.00
blockouts	cy	560	300.00	140.00
spillway bridge	cy	75	160.00	92.00
intake struct	cy	4,300	36.00	40.00
outlet struct	cy	1,000	50.00	34.00
diversion tunnel closure struct	cy	820	65.00	65.00
lining	cy	5,900	40.00	38.00
spillwy tunn lining	cy	3,500	75.00	65.00
control cable tunn lining	cy	235	80.00	135.00
diversion tunn plug	cy	1,200	25.00	26.00
gravity type walls	cy	4,500	30.00	22.00
around riv outlet pipes & in valve struct	cy	2,200	25.00	22.00
mass, for PP struct	cy	1,750	30.00	20.00
1st stage for PP sub struct	cy	5,000	30.00	26.00
in PP interm struct	cy	4,100	100.00	70.00
in PP superstruct & outlet gate struct	cy	1,300	175.00	120.00
in PP struct cover slabs	cy	110	100.00	40.00
Cooling concrete	cy	922,000	0.50	0.32
Met pipe or tube & ftgs, conc cooling systs f&p	lf	715,000	0.36	0.37
Drill 10" core specimens in concrete	lf	160	50.00	80.00
Control jts, tp A c	lf	520	1.85	2.40
Asb sht pack in jts f&p	sf	820	1.00	1.20
Bldg paper in jts f&p	sf	350	0.20	0.12
Jt filler, corkbd, 1" f&p	sf	3,300	2.00	1.35
sponge rub, ½" f&p	sf	440	2.40	1.80
1" f&p	sf	8,120	3.20	2.20
Rub jt strips w/metal straps f&i	lf	100	3.40	3.50
waterstops, tp D f&p	lf	500	3.10	2.80
tp E f&p	lf	1,470	4.10	3.30
tp F f&p	lf	590	2.60	2.80
Met seals, in dam f&p	lf	34,300	3.75	3.00
tp N2, in PP f&p	lf	1,800	$2.20	$3.40

Bids: 6-10-58 Items	Unit	Quantity	Unit Prices 1C	2
grt groove covers f&p	lf	8,300	1.10	1.50
Asph seals c	lf	425	11.00	16.00
Conc floor hardener f&a	sy	2,700	0.80	0.55
Membrane waterprfg f&p	sf	8,100	1.00	0.75
Prcst conc roof slabs f&i	sf	11,000	1.10	1.25
Insul on roofs f&p	sf	16,000	1.25	1.40
undersd transf deck f&p	sf	4,200	1.75	0.95
Asph sat felt builtup roofing, 4 ply f&c	sf	16,500	0.50	1.00
Stl, PP superstruct f&c	lb	850,000	0.30	0.22
Met rolling doors f&i	sf	890	10.00	12.00
Aluminum windows f&i	sf	555	6.20	10.00
Louvers, fxd strmprf f&i	sf	30	18.00	22.00
automatic f&i	sf	20	30.00	30.00
Struct stl, spillw bri e	lb	56,000	0.10	0.05
CI soil pipe & ftgs f&i	lb	49,000	0.50	0.40
bell & spigot, & flngd pipe, wall pipe & ftgs f&i	lb	33,000	0.75	0.40
Galv WIP & ftgs, nominal ϕ 4" & larger f&i	lb	6,000	0.50	0.90
Stl pipe & fittings, nomin ϕ 2" & less f&i	lb	13,000	1.30	1.00
over 2", under 6" f&i	lb	14,600	1.00	0.85
6" & over f&i	lb	68,500	0.70	0.65
Valv, nomin ϕ under 6" f&i	lb	500	2.00	1.90
over 6" f&i	lb	10,900	1.00	1.30
draft tube drain f&i	ea	3	700.00	600.00
Ice prevent air syst i	lb	18,000	1.00	1.80
Oil stor tanks, 4 f&i	ls	job	10,000	6,000
Anchor bolts f&i	lb	17,500	0.70	0.65
Stairway in dam i	lb	118,000	0.70	0.28
Pipe handrails for PP serv yd area & dam i	lb	48,000	0.70	0.40
Track for 85 t gantry crane i	lb	65,000	0.15	0.20
CI gratings for draft tube piers f&i	ea	6	350.00	220.00
Metalwork, Gov furn nonembedded i	lb	90,000	0.40	0.09
embedded i	lb	24,600	0.60	0.20
Misc metalwork f&i	lb	59,300	1.10	0.56
Cranes i	ls	job	22,600	28,000
test	ls	job	10,000	6,000
10 t w/cable reel fi&t	ls	job	35,000	25,000
Pipes, penstock f&i	ls	job	460,000	510,000
outlet f&i	ls	job	170,000	250,000
Bellmouths on inlet end of outlet pipes i	ls	job	2,000	1,500
Seats & gds for stoplog & drafttube bulkh gates i	lb	274,500	0.15	0.19
Lifting frames, 3 i	ls	job	1,000	600.00
Stoplogs, instal & store	ls	job	20,000	9,000
Trshrks & slot closures i	lb	518,000	0.12	0.027
Fixed wheel gate frames 3 penstock i	ls	job	12,000	15,000
2 spillway i	ls	job	6,000	7,000
2 outl wks bulkhead i	ls	job	11,000	14,000
Gate, ring follower, 2-66" complete i	ls	job	5,000	11,000
bulkhead at drfttube outlet, 6 i	ls	job	4,000	3,200
for outlet wks intake i	ls	job	1,000	1,500
fixed wheel, 3 penstock intakes i	ls	job	32,000	14,000
2 spillway tunn intake i	ls	job	25,000	12,500
Hoists for fxd whl gates 2 spillway i	ls	job	3,000	6,000
3 penstock i	ls	job	5,000	14,000
5t, drafttube bulkhead i	ls	job	5,000	3,600
Gate hoist struct at spillway tunn intakes i	ls	job	9,000	5,200
Valves, 2-66" hollow jet i	ls	job	3,000	6,200
6 contr systems, hollow jet vlvs, ring follower & fxd wheel gates i	ls	job	7,000	30,000
High press gate & hydraulic hoist in diversion tunn closure struct i	ls	job	1,500	1,000
contr equip & pipe f&i	ls	job	7,500	18,000
Grounding systems f&i	lb	9,500	3.00	2.10
Embed elect rigid metal conduit, ½"ϕ f&i	lf	200	1.85	1.75
¾"ϕ f&i	lf	11,000	2.00	2.00
1"ϕ f&i	lf	7,000	2.20	2.20
1½"ϕ f&i	lf	4,500	3.10	2.55
2"ϕ f&i	lf	3,800	3.75	3.20
2½"ϕ f&i	lf	900	4.50	4.00
3"ϕ f&i	lf	3,200	5.50	4.65
3½"ϕ f&i	lf	2,500	6.50	5.50
4"ϕ f&i	lf	1,900	7.50	6.00
5"ϕ f&i	lf	100	9.50	8.00
Outlet box, #1 cast f&i	ea	210	12.00	14.00
#2 cast f&i	ea	190	12.50	16.00
Boxes, tp FD f&i	ea	6	12.00	7.00
Parap ltg fixts, embedded parts f&i	ea	35	17.00	18.00
Power recept, compl w/enclos & matching plugs 440V, 60 amperes f&i	ea	9	75.00	58.00
100 amperes f&i	ea	3	120.00	70.00
Crane pwr conductors f&i	lb	3,000	1.00	1.20
Thermometer sets i	ea	6	200.00	70.00
Instrument groups i	ea	115	350.00	80.00
Part B				
Clear right of way	ls	job	15,000	22,000
Exc, access rdwy, station 815+40 to 844+00	cy	11,600	3.00	1.60
844+00 to 900+00	cy	106,100	4.00	3.35
900+00 to 915+00	cy	16,000	3.00	0.95
915+00 to 940+25	cy	130,000	$4.00	$1.75
PP roadway	cy	177,000	4.00	1.60
Water	Mgal	9,300	2.50	2.00
Embankment, roll	rhr	2,500	14.00	18.00
Overhaul exc for roadwy	micy	19,000	0.25	0.35
Exc, roadway structures	cy	700	14.00	5.00
Backfill, compacted	cy	850	3.00	3.00
CMP, 16 ga, 24" f&l	lf	596	7.00	7.00
14 ga, 24" f&l	lf	418	8.50	8.00
30" f&l	lf	156	10.00	10.00
12 ga, 48" f&l	lf	166	20.00	20.00
8 ga, 48" f&l	lf	126	30.00	28.00
Retain walls, met, bin tp, 5-6" base width, f&c	sf	800	8.50	7.50
7-9" f&c	sf	400	10.00	9.00
9-10" f&c	sf	200	11.00	11.00
Guardrail, beam type f&e	lf	8,200	3.20	3.50
end sects f & attach	lf	58	10.00	4.00
Guide posts f&s	ea	25	12.00	14.00
Subbase matl, select	cy	10,000	3.00	1.65
Crushed rock base	t	9,700	3.00	1.75
Over coat material	t	2,100	5.00	5.00
Asph, liquid, MC-2	t	70	65.00	60.00
MC-4	t	85	65.00	60.00
Part C				
Exc, rdwy & parking area	cy	59,000	3.50	1.40
Water	Mgal	840	2.50	3.00
Embankment, rolling	rhr	220	14.00	20.00
Exc, rdwy structs	cy	40	14.00	8.00
Backfill, compact	cy	35	3.00	5.00
CMP, 16 ga, 18" f&l	lf	36	5.00	6.00
14 ga, 24" f&l	lf	108	7.00	8.00
Guardrail, beam type f&e	lf	650	3.20	3.70
end sects f & attach	ea	4	10.00	4.00
Subbase matl, select	cy	2,250	3.00	2.10
Crushed rock base	t	2,500	3.00	2.85
Over coat material	t	490	5.00	5.60
Asph, liquid, MC-2	t	15	65.00	60.00
MC-4	t	20	65.00	60.00
Part D				
Crushed rock base	t	22,000	1.00	1.00
Water	Mgal	460	3.50	3.10
Over coat material	t	4,690	4.50	4.10
Asph, liquid, MC-2	t	150	50.00	43.00
MC-4	t	180	50.00	43.00
Runway planks on bri f&p	Mbm	10	250.00	210.00
Part E				
Exc, rdwy & parking areas	cy	7,900	3.50	2.20
Water	Mgal	70	2.50	6.00
Embankments, roll	rhr	60	14.00	25.00
Exc, rdwy structs	cy	25	14.00	8.00
Backfill, compact	cy	25	3.00	5.00
CMP, 16 ga, 18" f&l	lf	40	5.00	6.00
14 ga, 24" f&l	lf	78	7.00	8.00
Guardrail, beam type f&e	lf	800	3.20	3.70
end sects f & attach	ea	8	10.00	4.00
Timber bumper f&e	lf	160	2.60	6.00
Subbase matls, select	cy	1,000	3.00	2.20
Crushed rock base	t	810	3.00	2.50
Over coat material	t	210	5.00	6.00
Asph, liquid, MC-2	t	7	65.00	70.00
MC-4	t	8	65.00	70.00

c construct dr drill e erect f&a furnish & apply f&c furnish & construct f&h furnish & handle f&i furnish & instal fi&t furnish, instal & test f&l furnish & lay f&p furnish & place f&s furnish & set i instal rhr roller hr

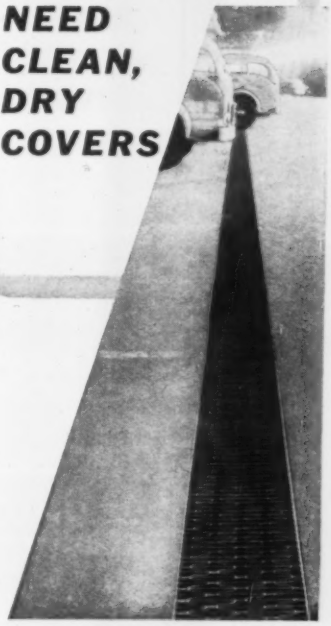
Reservoir Clearing Job Averages $230 an Acre

Competition was keen for the job of clearing 216 acres at Hills Creek Reservoir on the Middle Fork Willamette River near Oak Ridge, Oregon. Seventeen bids ranged from a low of $49,680 through a second bid of $52,800, to high of $112,320, more than twice as large as the low bid.

The award to Cresto & Lanphere, Easton, Washington, by the Corps of Engineers, U.S. Army Engineer District, Portland, Oregon, is 27.6% below the engineer's estimate and averages $230 an acre.

Time allowed for completion is 240 days.

Plant Trenches NEED CLEAN, DRY COVERS



TRENCHES in floors of industrial plants often house subsurface pipes, valves, etc. Often these trenches are covered with cast iron plates or wooden boards which collect grease, oil or water, making unsafe floor areas.

Trench covers of 75% open Irving metal grating remain safe because they will not collect these substances. In addition to providing drainage and traction, grating sections can be easily removed for access to trenches.

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Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES

- Cement, Aggregate Ready-mixed Concrete, Asphalt: Last, July 10; Next, Aug. 7
- Iron and Steel Products, pipe: Last, July 17; Next, Aug. 14
- Wood Products, Glass, Explosives, Chemicals: Last, July 24; Next, Aug. 21
- Wage Rates, Building Board, Lath, Insulation: Last, July 3; Next, Aug. 28

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE PARTITION—SCORED Per M. lots of 2,000 pieces or over, 3x12x12 in.	4x12x12 in.	8x12x12 in.	STRUCTURAL CLAY TILE—LOAD BEARING—SCORED Per M. lots of 2,000 pieces or over, 8x12x12 in.	10x12x12 in.	12x12x12 in.	BRICK Per M. in quantity Common backing	Straight hard	LIME Per ton, in paper, Carload lot, Hydrated finishing	Common hydrated	Pulverized or lump
Atlanta	$149.90p	$149.90p	$299.80p	$334.55p	.....	.....	$30.50p	$32.70p	$23.50	$24.50	$.....
Baltimore	217.00	231.00	434.00	491.00	602.00	690.00	36.00k	41.00k	35.60	23.20	.....
Birmingham	135.00p	142.00p	.....	303.00p	376.00p	465.00p	27.00ff	38.00g	33.02	22.30	26.33j
Boston	232.00†	248.00†	463.25†	556.00†	.....	.....	41.50p	46.50p	39.20†	31.20†	.....
Chicago	135.00	145.00	280.00	.....	.....	.....	30.00	32.00	38.00	35.20e	.....
Cincinnati	205.00j	205.00j	296.00 dd	213.00r	288.00j	314.00	48.75t	47.00r	30.04†	26.04†	30.04j
Cleveland	209.00	223.00	.....	175.00	.....	.....	38.00	41.00gg	31.00	25.00	.....
Dallas	152.00	152.00	300.00	364.50	446.25	552.50	26.75	48.00	41.80	24.58	28.50
Denver	.....	.....	.....	.....	.....	.....	21.50	49.50	46.00p	42.00p	46.00p
Detroit	273.00	298.00	545.00	.....	794.00	906.00	47.50p	48.00p	38.00	34.00	.....
Kansas City	158.00	158.00	312.00	312.00	410.00	500.00	33.00	33.00	36.26	34.26	29.76
Los Angeles	r	r	r	r	r	r	32.50§	.....	38.00	38.00	39.00
Minneapolis	192.00s	215.00s	437.00n	315.00w	400.00g	.....	45.60p	54.00y	47.00bbc	37.00bbc	49.00bbda
Montreal	170.00u	178.00u	325.00uu	270.00t	.....	.....	48.25b	56.30b	39.00	22.00	13.25
New Orleans	186.00	186.00	380.00	380.00	.....	.....	42.00	55.00	44.00	33.00	32.00P
New York	176.90t	188.70t	283.00Aa	285.50Aa	.....	.....	44.00	.....	40.00	37.00	.....
Philadelphia	180.00	180.20	337.90	405.00	.....	.....	30.34	38/42	27.60	25.60	3.17m
Pittsburgh	147.50t	157.75t	295.00r	335.00t	435.00t	500.00t	39.00t	46.00t	36.00t	31.00t	.....
St. Louis	178.50s	185.00p	391.00p	401.00p	459.00	621.50	43.00l	41.50	0.95aa	.80aa	1.35s
San Francisco	156.85*	177.10*	235.30dd*	.....	.....	.....	43.00*	43.00*	29.24	29.24	31.74
Seattle	235.00s	270.00p	490.00p	265.00pe	.....	.....	48.00	62.00	52.00bb	38.00bb	4.50mbb
Toronto	146.00	157.00	289.00	234.00f	395.00	.....	35.00	63.00	36.00	33.50	31.50

*§ F.o.b. Yard. **F.o.b. plant Stockton. †† F.o.b. yard Roxbury. *a Smooth. lots. *q Provincial and Municipal tax extra. *r Not used: earthquake danger; *s 8 x 16 x 12. *t 2% cash. *u Incl. Federal tax. *v Sand lime. *w 5 x 8 x 12. *x $4.50 del. *c 6 x 12 x 12 in.-6 cell. *d Pulverized hot. *e 5%, 10th following month. *y Chi common. *z Pebble: 80 lb sack. *aa 50 lb sack. *bb LCL. *dd 8 x 12 x *f 8 x 8 x 12. *g Lumps, $26.72. *h F.o.b. trucks, job site N.Y.C. *i 60 lb sacks. *j Truck load or over. *k $1.00 discount. *l Red face. *m Per bbl., 12. *ff 80% common. *gg Smooth. $51.50 Rough. 180 lb. processed. *n 7¾ x 7¾ x 12. *o Mason's double hydrated pressure. *p Truck

PAINT, ROOFING—F.O.B. CARLOAD LOTS

	RED LEAD Per 100 lb. in 600-lb. (Approx.) bbl. Dry a	WHITE LEAD Per 100 lb. in 100 lb. cases In oil w	READY-MIXED PAINT Per gal., drums Graphite b	Aluminum c	Ferric Oxide d	ROOFING SUPPLIES; Carload lots f.o.b. factory Rolls, slate surfaced, 85-90 lb. per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 300 lb. bbl. per ton
Atlanta	$16.50	$30.125	$3.59	$3.86	$3.31	$3.39	$2.20	$2.62	$0.67	$57.75
Baltimore	16.25	29.75	3.00	4.40	3.50	2.78	4.25	4.25	.48	54.25
Birmingham	16.50	30.125	3.90	3.40	.....	3.09	2.29ii	2.29ii	.82ff	45.00ee
Boston	16.25	29.75	.....	.....	.....	3.30q	2.23g	2.23g	.80g	58.00g
Chicago	16.25	29.75	.....	.....	.....	3.65ta	2.74ta	2.98ta	46.00bbv	57.70t
Cincinnati	16.25	29.75	.....	.....	.....	3.13	2.70	2.73	.428y	55.98
Cleveland	16.25	29.75	2.46pgg	2.57gg	2.86gg	3.196q	2.268e	2.85	.501y	49.00gg
Dallas	16.50	30.50	.....	3.25ff	.....	3.00ss	3.00o	3.00o	.470	66.00kk
Denver	16.75	30.25	3.98	5.20	3.70	2.49	1.90e	2.45e	.48ff	50.00
Detroit	16.25	29.75	2.70	3.95	2.70	2.83	1.91f	2.49f	.432ff	51.00
Kansas City	16.25	30.50	3.99	3.43	3.01	3.02ii	2.14y	2.14y	.63g	.....
Los Angeles	16.25	30.00	3.30n	4.50n	4.20n	3.20n	2.15nii	t	.70ny	t
Minneapolis	16.25	29.88/29.75	.....	.....	.....	2.78	2.27hi	2.28hi	.442i	50.00r
Montreal	.....	.....	5.02Dfft	5.94xfft	4.65kfft	5.40	4.65f	4.65f	1.60	.....
New Orleans	.....	.....	.....	.....	.....	2.34	1.63	2.85	0.680	.....
New York	15.25C	29.75	.....	.....	.....	3.20	2.10o	2.45e	.425a	49.00*
Philadelphia	16.25	29.75	3.90	3.40/3.65	3.50/4.60	3.00/3.30	2.54o	2.54o	.37/.45	48/54
Pittsburgh	16.25	29.75	2.20HE	2.25HF	2.25HG	3.37s	2.59s	.....	.45	.....
St. Louis	16.25	29.75	.....	.....	.....	3.40iis	2.54kk	2.90kk	.44y	62.00
San Francisco	16.25	30.00	3.20	4.30	3.50	2.95	1.97aa	3.10	.460jj	54.00
Seattle	16.25	30.25	3.47	4.19ee	.....	3.82qcc	3.30kcc	.....	.50ee	51.40ee
Toronto	.....	.....	5.00	5.75	5.50	5.40	4.15e	2.95e	1.70j	56.00A

*t Delivered. * Note: Red lead in oil 50¢ higher than white lead in oil. **Aver. wt. aprox. 425 to 550 lb drums. *a Red lead prices change frequently due to pig lead price changes. *b U.S. War Dept. Spec. 3-49A. *c ASTM Spec. D266-31. *d 80% minimum ferric oxide. *e 15 lbs. *f Per 432 sq ft. *g F.o.b. yard, Roxbury. *h Per roll, 65 lb. *i Net carload prices, Minneapolis and vicinity. *j 45 gal containers. *k Over 80% ferric oxide. *l Not used. *n F.o.b. city. *o Per 60 lb roll. *p 5-drum, 50 gal each. *q Per 90-lb roll. *r F.o.b. factory, Chicago. *s Truckload. †t Incl. Federal tax. *u Per 90-lb square. *v Per ton. *w Price to contractors $1.25 less. *x Ready-mixed. *y 55-gal container. *z Drums. *aa 15 lb. sq. ft. roll. *bb Roofers coating and cement. *cc LCL, truck delivery. *dd Asphalt pitch in 100 lb package. *ff 5-gal drums. *gg F.o.b. factory. *hh Incl. freight. *ii Per 100 lb. *jj Asbestos roof coating. *kk 400 lb barrels. *ll ASTM Spec. D982-49 *mm 2% cash. *nn Truckload. *oo skid packed. *pp type 304 *R revised. *A 400 lb barrels. *B ASTM Spec. D982-49 *C 98%. *D Std. black. *E Milit. spec.: E TTP27; F TTV81; G TTP31. *H No quoted after Oct. 1957 *R revised.

PLASTER, VERMICULITE AND METAL BUILDING SHEETS & TUBING

	PLASTER‡ Neat per ton	Gauging per ton	VERMICULITE‡ Home Insulation pellets	Plaster aggregate	Concrete Aggregate Untreated	PERLITE‡ Plaster Aggregate	Concrete Aggregate Untreated	ALUMINUM SHEET†† Flat .102" th 36"x96" & 48"x144" per lb†t	Corr roof .032" th 35"x12' per sht	STAINLESS STEEL† SHEET-TYPE 302g 20 ga 48"x96-120" per cwtbh	28 ga 36"x120" per cwtmm	COPPER WATER* TUBING-TYPE L 2000 ft lots per ft ½"b	⅝"a
			per bag of 4 cu ft										
Atlanta	$31.00	$30.00	$1.55s	$1.65s	$1.80al	$1.65	$1.65	$0.424c	$9.45n	$61.44n	$67.50	$16.74f	$23.41f
Baltimore	23.80	34.60	0.95	1.15	1.15	1.15	1.65	0.431	0.489r	56.25	64.25	0.1674	0.2341
Birmingham	33.00	39.00	1.55	1.55	1.80f	1.55	1.55l	0.446	10.48	67.34	76.09	0.1608	0.2244
Boston	22.00	30.00	1.40	1.40	1.45	1.45	1.50	0.466	30.10p	65.42dd	71.92ddff	0.1562	0.2176
Chicago	26.80	26.80	1.55	1.60	1.60r	1.60	1.60	0.506x	10.148a	65.15aee	73.90aee	0.1562	0.2176
Cincinnati	28.00*	28.00*	1.75	1.75	1.75	1.85	1.90	0.434	9.56	65.28	74.08ff	0.1608	0.2244
Cleveland	28.00	44.70	1.13k	1.16ii	1.24l	1.45	1.45	0.486aa	8.28	65.33aa	74.08aa	15.62f	21.76f
Dallas	30.65	32.65	1.05	1.21	1.32	1.21	1.32	0.474	0.510r	68.00	81.50	0.1520	0.2120
Denver	25.00	25.00	1.50	1.40	1.50	1.40	1.55	0.446	10.09	66.30gg	75.05gg	0.1772	24.69
Detroit	26.00	25.00	1.28	1.33	1.41	1.43	1.25k	0.456a	10.376a	65.15a	73.90a	14.02f	19.00f
Kansas City	30.00	35.00	1.14	1.18	1.26l	1.18	.....	0.444	9.50	67.50	76.25	15.62f	21.76f
Los Angeles	27.00	28.00	1.25k	1.20k	1.25	1.00	1.10	0.486	10.543d	67.10	75.85	0.1562	0.2176
Minneapolis	35.00	35.00	1.55	1.70	1.80	1.40	1.40	0.483	15.15w	65.71	72.21ff	0.1562f	0.2176f
Montreal	27.60h	35.60h	1.25	1.40	1.50	1.15s	1.15s	0.437	9.92	66.50	.....	0.1927	0.2160
New Orleans	34.00	48.00	1.25	1.25	1.25	1.25	1.25	0.424	8.503	71.50	72.45	0.1608	0.2244
New York	24.20	30.20	1.35	1.30	1.50	1.40	1.40	0.506a	10.14ad	68.58	77.33	16.08f	22.44f
Philadelphia	23/25	32.00	1.35	1.35	1.40l	1.05	1.05	0.44av	9.46a	66/68a	75/77a	15.62f	21.76f
Pittsburgh	30.00aa	33.00aa	1.60aa	1.50aa	1.35	1.73	1.73	0.424	9.664	64.00	76.25ppR	0.1378	0.1920
St. Louis	29.00	40.00	1.35	1.60ij	1.55	1.60	1.60	0.456	10.37	68.11	74.61y	15.62fm	21.76fm
San Francisco	29.50	30.50	1.38	1.38	1.50	1.30o	1.58o	0.506	9.13	67.10	75.85	0.1562	2176
Seattle	42.40	45.60	1.55	1.25k	1.85l	1.50k	.....	0.586	9.90	67.08	88.08	0.1562	0.2176
Toronto	28.00	45.50	1.20	1.30	1.35l	.....	1.55	0.3995	24.00ae	73.74	86.52	0.2525	0.2684p

‡trucklots, delivered †fob warehouse *fob city *a delivered *b½" O.D. *c ⅝" O.D. *d 0.100"th *e 34" x 80" sheet *f per 100 ft *g 5 tons & up; cold roll, anneal & pickled 2B finish *h incl Federal tax *i add 25¢ for pint of additive *j 1100 & 3003 alloy, mill finish *k bag of 3 cu ft *l treated with air entraining agent *m 2-10M ft *n fob mill fr equalized with nearest stocking competitor *o 250 sacks or more *p 100 sq ft *r per lb. *s 30 lb bag *t 36" x 96; 10.81 lb/sh; 48" x 144"; 21.7 lb/sh *u 19.31 lb/sh *v fob plant *w 48" x 144" *x 100th *y 27 gauge *aa 16M lb & up *dd add $1.00 cwt boxing *ee 4 tons & up *ff 26 ga *gg add $2/cwt boxing; $0.75/cwt on skids *hh Theoretical wt for 48" x 96": 60.4-lb, per sh *ii 300-bag lots *jj 100-lb bag *mm Theoretical wt: 19.7-lb per sh *nn 2% cash *oo skid packed *pp type 304 *R revised.

It takes just two steps to assemble the FLUID-TITE Coupling. Lubricate the tapered edge of the gasket. Then slide in the pipe.

Major Advance In Waterworks Industry. K&M's exclusive FLUID-TITE Coupling provides permanent, water-tight, root-tight connections. Allows deflection of up to 5°. Assembled in any weather.

SLIDE IT IN QUICK... IN 2 EASY STEPS

IT'S "K&M" ASBESTOS-CEMENT PRESSURE PIPE WITH EASY-TO-INSTALL FLUID-TITE COUPLING

Installation is fast and economical! It doesn't require skilled labor, heavy machinery, or heavyweight coupling pullers. Install it in any weather.

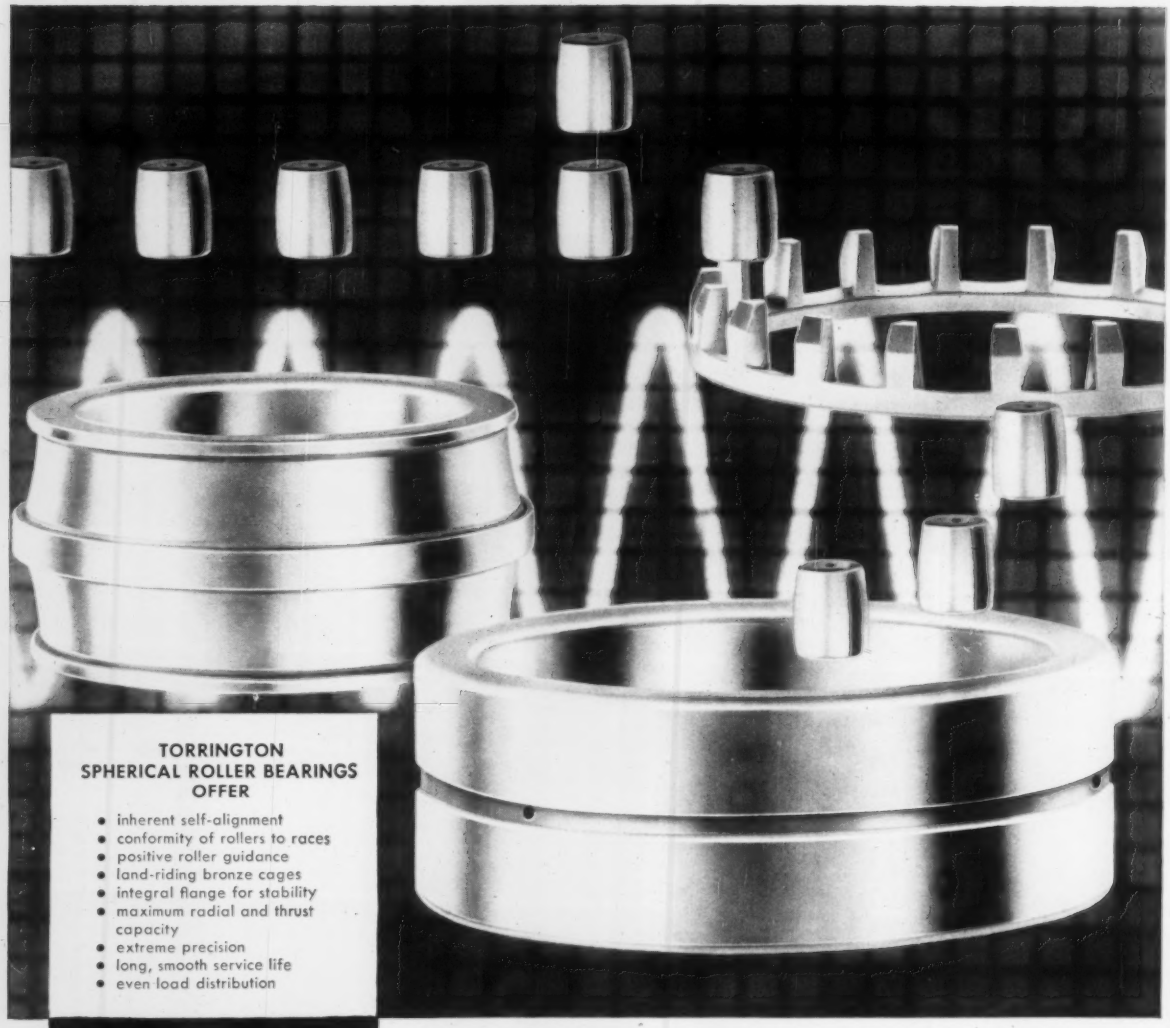
The seal grows tighter as the pressure climbs! Coupling rings expand as water mains fill. Rings have holes on one side for self-energizing action.

It's practically indestructible! "K&M" Asbestos-Cement Pressure Pipe is non-tuberculating, non-electrolytic, and corrosion-resistant. Its first cost is often the last cost. Pressure remains normal—pumping costs stay low.

Write today for more information.

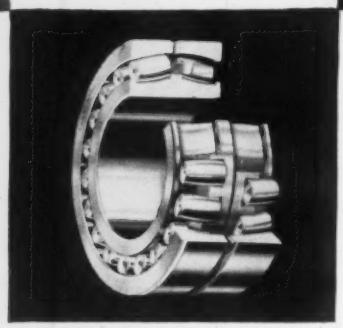
K·M
BEST IN ASBESTOS

KEASBEY & MATTISON
COMPANY • AMBLER • PENNSYLVANIA



TORRINGTON SPHERICAL ROLLER BEARINGS OFFER

- inherent self-alignment
- conformity of rollers to races
- positive roller guidance
- land-riding bronze cages
- integral flange for stability
- maximum radial and thrust capacity
- extreme precision
- long, smooth service life
- even load distribution



Electronics Matches Rollers and Races for Extreme Accuracy

Torrington employs the latest electronic techniques to insure precise geometric relation between components of Torrington Spherical Roller Bearings.

Roller diameters of a given complement are matched within .0001" of each other. For ultra-precision bearings, tolerances are even closer. Inner and outer races are as rigorously classified. Components are selected for assembly to provide accurate diametrical clearance. The result is bearings of unparalleled accuracy for minimum wear and friction, smooth operation and long service life.

Torrington's care for these details of accuracy is matched only by our care in matching the *right* bearing to the *right* job. In this, you can rely on your Torrington representative and the facilities of Torrington's Engineering Department. **The Torrington Company, South Bend 21, Ind.—and Torrington, Conn.**

TORRINGTON BEARINGS

District Offices and Distributors in Principal Cities of United States and Canada

SPHERICAL ROLLER • TAPERED ROLLER • CYLINDRICAL ROLLER • NEEDLE • BALL • NEEDLE ROLLERS • THRUST

Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES

- Cement, Aggregate Ready-mixed Concrete, Asphalt: Last, July 10; Next, Aug. 7
- Iron and Steel Products, pipe: Last, July 17; Next, Aug. 14
- Wood Products, Glass, Explosives, Chemicals: Last, July 24; Next, Aug. 21
- Clay Products, Lime, Plaster, Paint, Roofing: Last, June 26; Next, Aug. 28

BUILDING BOARD & LATH AND INSULATION—DELIVERED TRUCKLOAD LOTS

	GYPSUM PLASTER BOARD tapered edge per Msq ft ½"	¾"	GYPSUM BOARD LATH plain or perf per Msq ft ⅜" x 16" x 48"	GYPSUM SHEATHING tongue & groove per Msq ft ½" x 2' x 8'	FIBER BOARD SHEATHING asph impreg & coat per Msq ft sq ed	½" T&G	FIBER BOARD INSULATION sq edge, paint per Msq ft ½"	MINERAL WOOL INSULATION loose, per 40-lb bag	3" batts per M sf	GLASS FIBER INSULATION loose, per 40-lb bag	3" batts per M sf	ALUMINUM FOIL 60¢ Kraft 1 side foil per roll of 250 s. f.	Expansible Blanket 2 layers foil per Msq. ft
Atlanta	$70.00	$80.00	$43.50	$70.00	$70.00	$127.00	$70.00	$1.30z	$60.00	$2.00b	$75.00	....	....
Baltimore	51.70f	45.55f	34.25f	55.35f	65.00f	108.50f	69.00f	1.30	66.50	1.50	45.00	$4.00g	$33.50
Birmingham	68.90	57.00	47.77	75.00	65.00	136.50	81.00	1.40	70.00	1.60	75.00	3.30g	....
Boston	60.00m	50.00m	36.00m	80.00m	65.00m	120.00m	79.00An	1.45	75.00	....	65.00	5.30	53.50
Chicago	67.00	54.00	45.00	82.00	87.00	123.00	87.00	1.85	80.00	....	63/65l	5.25g	....
Cincinnati	48.00w	42.85w	32.05w	51.16w	70.00w	125.00w	72.50w	1.30	63.00	1.30	76.50	3.12j	50.00
Cleveland	62.00	56.50	41.50	65.00	75.00	125.00	80.00	1.35/1.50	75.00	....	53.00*	17.50o	55.00
Dallas	55.03	52.50	42.50	80.00	68.50	117.50	68.50	2.00	62.25	1.45	66.15	4.40g	....
Denver	62.00	54.50	41.00	82.00	78.90	126.00	74.90	....	71.00u	1.30z	60.00u	11.00r	21.00
Detroit	64.00	53.00	37.00	68.00	60.50	100.50	60.50	....	....	1.95b	88.00	....	....
Kansas City	65.00	55.00	40.00	....	72.00	115.00	75.00	1.40	75.00	2.00	75.00	3.60d	53.98z
Los Angeles	66.00	60.50	0.33y	64.50	75.00	125.00	80.00	....	83.00	1.35z	64.00	4.40g	....
Minneapolis	75.00	65.00	0.41z	80.00	78.00	140.00	78.00	2.00	80.00	1.80	80.00	5.50	....
Montreal	56.00	47.40	36/39	53.00	63.25	....	63.00	1.50	66.00	1.50	66.00	9.00q	58.00
New Orleans	60.00	50.00	45.00	80.00	75.00	140.00	72.50	1.75	65.00*	....	....	....	....
New York	55.25	47.25	26.25	54.25	75.00	120.00	75.00	1.55b	68.50	1.55b	68.50	4.38i	52.50e
Philadelphia	50/55	48/53	34/40	49/54	68/73	105/110	55/65	....	60/70	....	70/75	5.60/6.34	40/50
Pittsburgh	70.00	65.00	40.00	....	62.50	102.50	57.50	1.05s	55.00s	1.05s	55.00s	3.80i	38.50
St. Louis	67.00	56.50	40.00	70.00	75.00	120.00	80.00	1.35	85.00	1.65	70.00	4.50i	....
San Francisco	57.00	48.00	0.36x	58.00	68.00	109.00	67.00	1.60	66.50	1.60	66.50	4.95	55.00
Seattle	68.30	57.65	51.05	65.00	74.50	125.00	73.50	1.60t	74.00	1.90*p	80.00*l	4.25	48.50
Toronto	55.00	47.00	38.00	64.50	75.00	....	....	1.50	62.50	....	62.50	16.50e	46.00

*e F.o.b. warehouse. *a Semi thick. *b 30¢ bag. *c 12" to 24" width. *d 40¢ kraft paper, 5 Msf, 100/500 rolls. *e 20¢ sq ft bag, 4" thick. *f Full trailer loads. *g 80¢ kraf Paper backing. *h LCL. *i 40¢. *j 80¢. *l 2". *m 10 ton quantities. *n Distributor's sliding. *o Per Msf roll. *p 32¢ bag. *q 500 sf. *r Per cwtt *s 35¢ bag. *t 26¢ bag. *u Flame proof $75. *w F.o.b. city. *x Sq yd. *z Spun rock wool, 3½ cu ft bags

HOURLY WAGE RATES—Base rate + fringe benefits

	Bricklayers	Carpenters	Struct. Iron Workers	Hoisting Engineers	Plasterers	Electrical Workers	Steamfitters	Common Labor Building	Common Labor Heavy Cons
Atlanta	$3.75	$3.05	$3.15+7½¢d	$3.225	$3.125	$3.30+21½¢r	$3.30+25¢d	$1.70	$1.70
Baltimore	3.80+10¢d	3.20+7½¢d	3.75+7½¢d	3.80/3.95+10¢g	3.45+7½¢ii	3.425+7½¢ii	3.30+7½¢d	2.05+7½¢d	2.05+7½¢d
Birmingham	3.75	2.85	3.35+10¢	2.65r	3.05	3.425	3.32+10¢r	1.65	1.75
Boston	3.75+15¢d	3.40+10¢d	3.70+20¢r	3.77½+10¢l	3.65+20¢	3.55+12¢s	3.20+10¢d	2.55+7¢d	2.50+7¢d
Chicago	3.87½+7½¢t	3.65+20¢r	4.00+16¢t	3.55+5¢t	3.70+23¢t	3.90+12¢t	3.75+22¢ee	2.77½+7½¢t	2.77½+7½¢t
Cincinnati	3.85	3.57½	3.60+10¢d	3.375/3.60	3.62½	3.82+4¢N	3.80+9½¢r	2.62½	2.525
Cleveland	3.805+10¢t	3.83	3.73+10¢t	3.83	3.83	3.855	3.73+10¢d	3.10	3.005
Dallas	3.875	3.10	3.225+7½¢t	3.20/3.25	3.56½+10¢t	3.75+7½¢t	3.375+8½¢t	1.62½	1.62½
Denver	3.75	3.25	3.175+7½¢d	3.05	3.375+12½¢kk	3.60+14¢l	3.55+10¢d	2.17	2.17
Detroit	3.77+38¢ff	3.40+40¢e	3.60+22½¢P	3.47+25¢h	3.66+34¢cl	3.85+34½¢C	3.73½+14¢P	2.58+25¢e	2.65+33¢e
Kansas City	3.85	3.325	3.40	3.345	3.625	3.47½+16D	3.40+9¢W	2.355	2.405
Los Angeles	3.85+10¢hh	3.375+10¢d R	3.625+10½¢kk	3.41+10¢d	4.00+30¢ll	4.15r	3.80+29¢f	2.68+10¢d	2.68+10¢d
Minneapolis	3.725	3.30	3.47	3.30	3.40+23¢ff	3.38+36¢n	3.215+20¢e	2.55	2.55
New Orleans	3.475+5¢t	2.95	3.25+7½¢t	3.025+7½¢t	3.035+5¢t	3.47+7½¢t	3.40+15¢t	1.70	1.70
New York	4.25+37¢hv	4.00+32¢hJ	4.30+36¢n	4.25+34¢tt	4.15+52¢k	3.90+43½¢eF	4.20+42¢hL	2.90+23.2¢F	2.90+23.2¢F
Philadelphia	4.00+17¢t	3.635	4.05+15¢M	4.095+10¢t	3.90+15¢t	4.07½+16¢n	4.00+11½¢t	2.35	2.65
Pittsburgh	4.15+20¢m	3.675+10¢t	4.00+10¢d	3.64+10¢d	3.825+17½¢m	4.35+28¢d	4.00+20¢m	2.45+20¢m	2.30+20¢ff
St. Louis	3.90+31½¢	3.575+10¢t	3.60+7½¢t	3.675t	3.80+7½¢t	3.83+29½¢t	3.92½+27½¢t	2.625+10¢t	2.625+10¢t
San Francisco	3.95+52½¢dd	3.30+32½¢mm	3.62½+10¢t	3.405+10¢t	3.74+52½¢w	3.91+31½¢ff	3.70+46¢K	2.685+10¢t	2.685+10¢t
Seattle	3.90+10¢d	3.13+10¢d	3.40+10¢d	3.29+20¢e	3.40+10¢d	3.65+26¢X	3.62+23¢T	2.70+10¢d	2.70+10¢d
Montreal	2.20+5¢jj	2.10+5¢jj	2.25+5¢jj	2.00+5¢jj	2.35+5¢jj	2.20+5¢jj	2.32+5¢jj	1.50+3¢jj	1.50+3¢jj
Toronto	2.85+11¢l	2.50+10¢l	2.55+7¢l	2.60+10¢l	2.60+20¢ll	2.80+11¢l	2.69+17¢ll	1.55+6¢l	1.55+6¢l

ENR Skilled Average (Bricklayers, Carpenters, Iron workers): $3.720. ENR Common Average $2,463.

* Cost of living bonus incl. in base pay. *a 6 hr day. *b 7 hr. day. *c 5% vac. stamp fund plus 12¢ WF for bricklayers; 4% VF for electricians plus 10¢ WF, 1% PF. *d H & WF. *e 10¢ H & W, 10. VF. *f 10¢ H & W, 5¢ VF. *g 2¢ Ed, 7½¢ H & W. *h $2.85 homes & housing plus 7½¢ WF. *i WF. *j Inc. 4% VF; 1% PF nd bv employer. *k 10¢ WF, 10¢ VP, 5¢ HP. *l 4% VF. *m 10¢ WF, 10¢ PF. *n 7% V & Hol., 3% H & W, 1% PF. *o 10¢ WF, 10¢ PF. *p 3% WF, 3% PF+10¢ in lieu of nd. hol. *q 10¢WF, 6% V & H, 3% PF. *r 4% WF, 20¢ PF. *s 5% W & PF, 4% VF, 1% NC 1% JI, plus 6 PH. *t Inc. 10¢ WF, *u 10¢ WF, 1% PF, ½% aporent. *v 1 drum: 2 drums, 2.93. *w 20¢ VF, 17½¢ PF, 3% Prom., 12¢ W. *x 2% VF. *y 10¢ H & W, 10¢ PF. *z 10¢ WF, 8¢ HP, 15¢ V & H. *A 15¢ WF, 15¢ PF, 20¢ BF. *B 7½¢ VP, 5¢ PF, 1½¢ Ed. F. *C 9¢ H & W & Ins., 7% V & H. *D 10¢ H & WF, 5¢ indus. prom. *E 6% WF, plus travel pay per day. *F Plus $4 per dav annuity contrib. *G 10¢ WF, 10¢ VF, 3¢ prom. *H 10¢ WF, 10¢ VP, 3% PF, 2% PH. *I 5¢ H & WF, 5¢ advtg. *J 5% WF, 6 PH, 3% PF. *K 25¢ W & PF, 15¢ VF, plus 6¢ misc. *L 3% WF, 3% PF, 3% VF, 1% Ed. F. *M 10½¢ WF, 7½¢ PF. *N 1% PF. *O 10¢ WF, 1% NECA, 3¢ AF. *P 10¢ H Ins., 7½¢ PF, 5¢ VF. *Q 2 drums: 1 drum $3.10 3.25+10¢ WF. *R 10¢ H & WF, 2¢ admin. 1¢ aporent. *S 10¢ H & WF, 15¢ PF. *T H & W, VF. *U 10¢ WF, 15½¢ VF, 1¢ PF, 5¢ Ind. F. *V 4% WF, 4% PF. *W 7½¢ WF, 1½¢ Ed. F. *X 7½¢ WF, 15¢ VF, 3½¢ PF. *aa 7¢ WF, 15¢ PF. *bb 8¢ WF, 2¢ advg. *dd 17½¢ WF, 20¢ PF, 10¢ PH, 5¢ Jt Bd. *ff 10¢ H & W, 5¢ PF. *gg 10¢ ins. *hh 7½¢ H & WF, 5¢ indus. prom. *ii 4% WF, 4% PF, 6 PH. *jj 2% VF. *kk 10¢ HW, 10¢P, ½¢ AF. *ll 10¢ HW, 10¢ PF, 5¢ Trust F, 5¢ Trade Prom. *mm 10¢ W, 20¢ PF, 2½¢ Gen. Ben.

	Truck drivers 1½ T	under 4 cy	over 4 cy	Tractor Operators Incl. bulldozers 34-49 hp	70-100 hp	100 & over	Tractor scraper 15-18 cy	Power cranes & shovels ½ cy	¾ cy	Motor grader oper	Air comp oper	Air tool oper
Atlanta	$1.70	$1.80	$2.05	$2.70	$2.85	$2.85	$2.70	$3.225	$3.375	$2.70	$2.625	$1.77
Baltimore	2.00+7½¢e	2.00+7½¢e	2.10+7½¢hh	3.40/3.55 +10¢eh	3.40/3.55 +10¢eh	3.40/3.55 +10¢eh	3.40/3.55 +10¢eh	3.80/3.95 +10¢eh	3.80/3.95 +10¢eh	3.40/3.55 +10¢eh	2.85/3.00 +10¢eh	2.10+7½¢e
Birmingham	1.73	1.92ff	2.25ee	2.79	2.79	2.79	2.93	2.93	2.93	2.89	2.52	1.90
Boston	2.395c	c	c	3.40+10¢ad	3.40+10¢ad	3.40+10¢ad	3.40+10¢ad	3.775+10¢e	3.775+10¢e	3.40+10¢e	3.325+10¢e	2.60+7¢ee
Chicago	2.36+15¢fo	.....	.....	3.30+5¢e	3.45+5¢e	3.202+5¢e	3.00+5¢e	3.90+5¢e	3.90+5¢e	3.25+5¢e	3.10+5¢e	.....
Cincinnati	2.45+2½¢ee	2.55+2½¢ee	2.65+2½¢ee	3.375	3.375	3.375	3.375	3.375R	3.60	3.60	3.60	3.60
Cleveland	2.75+10¢e	2.75+10¢e	2.75+10¢e	3.58	3.58	3.58	3.58	3.83	3.83	3.58	3.455	3.455
Dallas	1.625	1.625	1.625/2.625l	1.625/2.625l	1.625/2.625l	1. 25/2.625l	1.625/2.625l	1.625/2.625l	1.625/2.625l	1.625/2.625l	1.625/2.625Rl	1.775/2.00l
Denver	2.30	2.40	2.55	2.30	2.90	2.90	2.90	3.05	3.05	2.90	2.90	2.45
Detroit	2.61	2.61	2.61	3.50+10¢e	3.50+10¢e	3.50+10¢e	3.50+10¢e	3.50+10¢e	3.50+10¢e	3.50+10¢e	3.225+10¢e	2.71+25¢mm
Kansas City	2.33n	2.33n	2.405p	2.65	3.10r	3.10r	3.10r	3.345	3.345	3.10	3.345t	2.45
Los Angeles	2.83+10¢e	2.83+10¢e	3.03+10¢e	3.71+10¢e	3.71+10¢e	3.71+10¢e	3.81+10¢e	3.81+10¢e	3.81+10¢e	3.81+10¢e	2.93+10¢e	2.89+10¢e
Minneapolis	2.55	2.55r	2.70r	2.93	3.15r	.....	3.15	3.37r	3.63r	2.93	2.82	2.70
New Orleans	2.425+7½¢eR	2.425+7½¢eR	2.425+7½¢eR	3.75+7½¢eR	3.075+7½¢e	3.075+7½¢e	3.075+7½¢e	3.075+7½¢e	3.075+7½¢e	3.075+7½¢e	2.425+7½¢e	1.80
New York	2.21+22½¢e	2.75+14¢hh	2.75+14¢hh	3.625+20¢eh	3.625+20¢eh	3.625+20¢eh	3.75+30¢eh	4.50+36¢eh	4.50+36¢eh	3.75+30¢eh	3.75+30¢eh	3.35+27¢ee
Philadelphia	——2.315/2.45+12½¢ee——			——3.34/4.09½+10¢e——			3.34/4.09½ +10¢e	—3.34/4.09½+10¢e——		3.34/4.09½ +10¢e	3.34/4.095+10¢e	2.35+15¢e
Pittsburgh	2.37+20¢m	2.51+20¢m	2.61+20¢m	3.44+10¢e	3.44+10¢e	3.44+10¢e	3.44+10¢e	3.64+10¢e	3.64+10¢e	3.64+10¢e	3.15+10¢e	2.30+20¢m
St. Louis	2.65+7½¢ee	2.70+7½¢e	2.70+7½¢e	3.675kk	3.675kk	3.675kk	3.675kk	3.675kk	3.675kk	3.675kk	3.125kk	3.125kk
San Francisco	2.75+10¢e	2.75+10¢e	2.89+10¢e	3.52+10¢e	3.52+10¢e	3.52+10¢e	3.52+10¢e	3.85+10¢e	3.85+10¢e	3.68+10¢e	3.13+10¢e	2.955+10¢e
Seattle	2.87+17½¢ee	2.85+17½¢dd	3.07+17½¢ee	3.26+20¢tt	3.26+20¢tt	3.26+20¢tt	3.26+20¢tt	3.63+20¢tt	3.63+20¢tt	3.35+20¢tt	2.99+20¢tt	2.90+10¢e
Montreal	1.50+3¢ll	1.50+3¢ll	1.50+3¢ll	1.70+4¢ll	1.93+4¢ll	1.93+4¢ll	1.93+4¢ll	2.19+5¢ll	2.19+5¢ll	1.93+4¢ll	1.80+4¢ll	1.80+4¢ll
Toronto	1.75+9¢ee	1.75+9¢ee	1.75+9¢ee	2.00+8¢ee	2.10+8¢ee	2.10+8¢ee	2.10+8¢ee	2.60+10¢ee	2.60+10¢ee	2.10+8¢ii	2.15+9¢ee	2.15+9¢ee

*a H & WF. *b lower rates, straight time; other broken. *c 2-axle; 10 wh. 3 axle $2.45; Euclid $2.65. *d intermediate. *e bldg contr.; highway $2.45+7¢ WF. *f less than 2-T. *g up 6 cy. *h 4% WF, 4% PF. *i 6-8 cy. *j plus $2 pd by employer for hosp. death benefits to family. *k bldg constr; steel contr $3.475. *l higher rates are union, other taken from min. wage approved by County Comm. Court. *m 10¢ H & W, 10¢ PF. *n flatbed. *o under 10 cy. *p over 10 cy. *q over 50 hp. *r blade grader. *s WF. *t single. *u incl. 10¢ H & W. *w 7½¢ H & W. 5¢ PF. *x 7½¢ WF, 10¢ PF. *y to 3½ cy. *z 3½ cy & over. *aa plus W & PF. *bb 3% WF, 2% PF; plus 11 PH. *cc 11¢ WF, 11½¢ PF, 11 PH. *dd up to 5 cy. *ee 5 cy & over. *ff 1½ to 3 T. *gg up to 5 T; 5 T & over, 2.12. *hh 5¢ H & WF ,21½¢ PF. *ii 4% VF. *kk incl. 10¢ WF. *ll Incl. 2% VF. *mm 10¢ H & WF, 10¢P, 5¢ VP. *oo Plus $2.25 wk. WF. *ss 5% WF, plus 6 PH. *tt 10¢ H & WF, 10¢ PF. *R revised

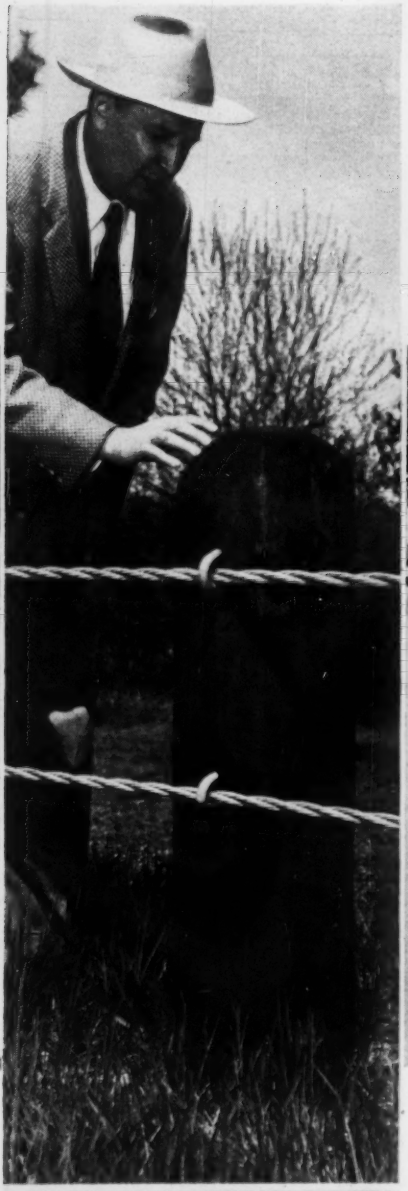
MEXICO CITY PRICES

Pesos, F.o.b. City		Jun. '58	Jul. '58
Common Wages—Building (8 hr. day) (Peons)	av. per hr.	1.57	1.57
Common Wages—Heavy Const. (8 hr. day) (Peons)	av. per hr.	2.00	2.00
Skilled Labor Wages			
Carpenters (8 hr. day) 1 cl.	av. per hr.	3.25	3.25
Bricklayers (8 hr. day) 1 cl.	av. per hr.	2.87	2.87
Struct. Iron Workers (8 hr. day)			
Remachadores	av. per hr.	4.38	4.38

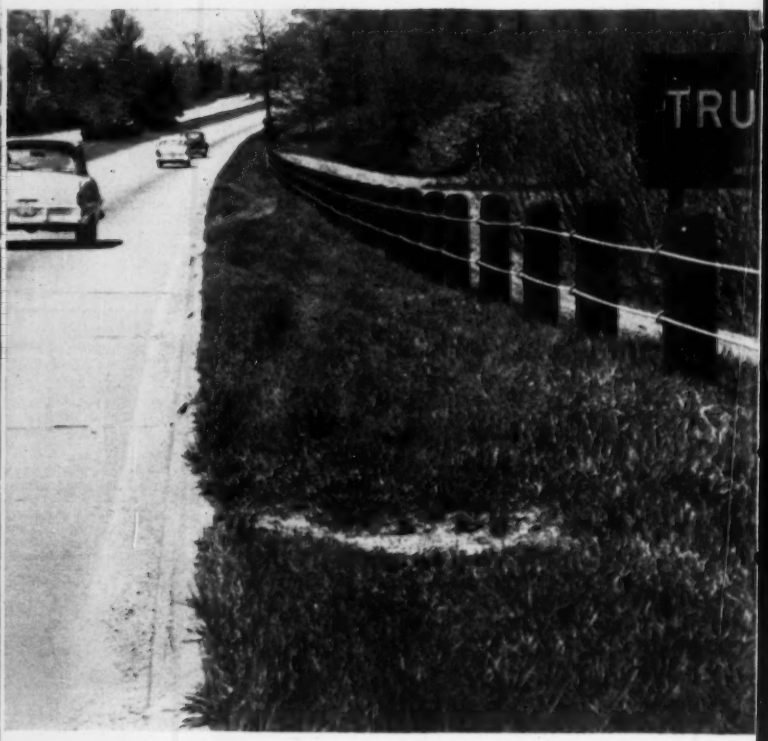
Struct. Steel, Shapes		Jun. '58	Jul. '58
3"-15" x 12 meters	per metric ton	2400.00¢	2400.00¢
¢ fob Monterrey			
Reinf. Steel, Corrugated Rods			
½" x 11 meters	per ton	1800.00	1800.00
⅝" x 11 meters	per ton	1800.00	1800.00
¾" x 11 meters	per ton	1750.00	1750.00
⅞" x 11 meters	per ton	1750.00	1750.00
1" x 11 meters	per ton	1750.00	1750.00
1" x 11 meters	per ton	1750.00	1750.00

Gravel truck load at 3½ cu. meters		Jun. '58	Jul. '58
Blue Gravel	per tr. load	81.00	84.00
Rose Gravel	per tr. load	65.00	65.00
Cement, Std. Port. (Tolteca)	per ton	230.00	230.00
Lumber			
1" Pine	per M ft.	1700.00	1700.00
1½" Pine	per M ft.	1900.00	1900.00

R: revised



Mr. Clinton Peterson, Division Engineer of Maintenance, examines a pressure-creosoted post.



Posts untreated rot out in 5 to 10 years.

The Merritt Parkway in Connecticut, opened in 1938, was one of the first of the modern toll roads. The original rustic guard rails were generally of oak or chestnut dipped in a preservative bath. These showed early signs of deterioration according to Mr. Clinton R. Peterson, Division Engineer of Maintenance. Some of the posts lasted only five to ten years—and replacement was costly.

Obviously a change had to be made to save taxpayers' money. Wood preservation experts from the highway department, a university forestry school and the Connecticut Agricultural Experiment Station began a study. After much experimentation, the conference reported

Pressure-creosoting doubles the life of guard rail posts on Merritt Parkway

135,000 feet of guide railing, supported by pressure-creosoted posts, is used on the Merritt Parkway. Note the reflectors on the posts for night visibility.

that *pressure treatment with creosote was the preferred choice of all these authorities.* At that time, full-length pressure-creosoted posts were made the standard in the state. Pressure-creosoted posts have a life expectancy of 25 to 30 years.

The original rustic railings were replaced with steel cable guard rails firmly supported by pressure-creosoted posts. The domed-top post was favored for its looks and water shedding ability. Some beveled-top posts were used and appear to have about equal life.

This experience on the Merritt Parkway and other Connecticut highways verifies the results being obtained all over the country. The deep penetration of pressure creosoting is needed to assure adequate protection—not only from rot but from termites and other wood destroying insects as well.

U. S. Steel does not make pressure-creosoted posts but supplies much of the creosote used by the treating industry. Why not take advantage of this easy way to reduce highway costs? Pressure-creosoted posts are readily obtained in most areas. For information, write United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

Creosote's Past Assures Wood's Future

Sales Offices in Pittsburgh, New York, Chicago, Salt Lake City and Fairfield, Alabama.

USS Creosote

TRADEMARK

Construction Reports

Bids Asked—Low Bidders—Contracts Awarded—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, D. TARTAGLIA, Reports
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

BUILDINGS—BA

▲ **Mass., Medford** — DORMITORIES — BA 8/7 — Tufts University, Bd. Trustees, Medford, two dormitories. $1,500,000. Perry, Shaw, Hepburn & Dean, 31 St. James Ave., Boston, Mass., archts. CD 1/23.

▲ **Conn., New Britain**—CLASSROOM—BA 8/13—State P. Wks. Comr., Hartford, Classroom Bldg., Proj. BI-R-160, Teachers' College. $1,000,000. CD 1/21/57.

HEAVY CONSTRUCTION—LB & CA

▲ **VERMONT**—State Dpt. Hys., State House, Montpelier, **The Lane Constr. Corp.**, 965 E Main St., Meriden, Conn. CA **$5,954,987** bypass proj., incl. grading, drainage, sub-base with b. conc. surf. course, 10 composite WF beam bridges, 2 bridges each composed of 2 deck cantilever truss spans connected with suspended deck truss spans with 2 composite WF beam approach spans, Int. Rd. No. 91 I-91-1 (2), Brattleboro. Bids July 11. CD 7/16, under LB.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Mass.—**M. DeMatteo Constr. Co.**, 200 Hancock St., Quincy, Mass., LB **$757,800**, est. $805,323, section of Md-Cape Hy., FA Proj. DF 328 (8), Orleans and Eastham.
Mass.—**George Brox, Inc.**, 1424 Methuen St., Dracut, Mass., LB **$83,275**, est. $104,725, highway work, Powell and Wilder Sts., Lowell. Bids July 15. CD 7/3.

▲ **MacLean Grove & Co., Inc.**, 400 Madison Ave., New York, N. Y. LB **$5,782,943**, Contr. 206-Section 5-South Charles Relief Sewer, Brighton-Roxbury and Brookline, BOSTON, MASS. Commonwealth of Mass., Metropolitan Dist. Comn., Constr. Div., 20 Somerset St., Boston, Mass. Bids July 17. CD 7/18.

▲ **CONNECTICUT**—State Hy. Comn., State Office Bldg., Hartford, Bids opened July 14,
Conn.—**Jarvis Constr. Co., Inc.**, 5 Dover Rd., Manchester, Conn., LB **$977,978** (6 bidders) Proj. 82-103, dual rolled beam bridge over Sebethe River, c. conc. 2,650 lin. ft. Rte. 9, Cromwell and Middletown.
Conn.—**Simpson & Whitehouse Constr. Co.**, Ashford (P.O. Mansfield Center), Conn., LB **$234,828** (8 bidders) Proj. 141-75, 2-span rolled beam composite bridge over N. Y., N. H. & H. R.R., b. conc. 2,650 lin. ft. Rte. 200, Thompson. CD 6/27.

BUILDINGS—LB & CA

▲ **M. Frank Douglas**, c/o American Finance Co., Inc., Main St., Salem, Depot, N. H. Owner Builds. Approx. **$1,250,000.** HOUSING DEVELOPMENT, 100 houses, SALEM, N. H.

▲ **Tornabene Bros. Co.**, 170 Needham St., Newton Lower Falls, Mass. CA **$1,203,000**, est. $1,000,000, HIGH SCHOOL, Edar and Whiting Sts., HANOVER, MASS. Town, High School Bldg. Comn., Town Hall, Hanover, Mass. Bids June 12. CD 6/17, under LB.

▲ **George E. Emerson, Inc.**, 34 Britton St., Pittsfield, Mass., CA **$859,860**, E-57-14, SCIENCE, GYMNASIUM and AUDITORIUM BLDG., State Teachers College, NORTH ADAMS, MASS. Commonwealth of Mass., Dpt. Educ., c/o Div. Bldg. Constr., 38 Chauncy St., Boston, Mass. Bids July 2. CD 7/9.

▲ **Vappi & Co., Inc.**, 240 Sydney St., Cambridge, Mass., LB **$1,149,547**, RESEARCH LABORATORY, KITCHEN, CAFETERIA, Longwood Ave., ROXBURY, MASS. Boston-Lying-in Hospital, 221 Longwood Ave., Roxbury, Mass. Bids July 17. CD 6/25.

▲ **Tocci Brothers Constr. Co., Inc.**, 38 Colonial Ave., Newton, Mass., CA **$1,584,589**, est. $1,600,000, HIGH SCHOOL, Franklin St., WHITMAN, MASS. Towns, Whitman and Hanson, Regional High School Dist. Comn., Principal's Office, Essex St., Whitman, Mass. Bids June 20. CD 6/26, under LB.

▲ **Granger Constr. Co., Inc.**, 306 Main St., Worcester, Mass. CA **$1,157,000**, est. $1,250,000, SCIENCE BLDG., WORCESTER, MASS. Holy Cross College, College St., Worcester, Mass. CD 7/17, under LB.

▲ **Fluor Corp.**, 2500 S. Atlantic Blvd., Los Angeles 12, Calif., CA Est. **$1,500,000**, GAS COMPRESSOR, CROMWELL, CONN. Asgonquin Gas Transmission Co., Gen. Off., 25 Faneuil Hall Sq., Boston, Mass. Mid-Continent Div., Fluor Corp., 3137 Old Spanish Trail, Houston, Tex., engr. CD 8/15.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

▲ **Md., Baltimore**—PIER, etc.—BA 8/4—Maryland Port Auth., at office, Director of Engineering, Administration Office, 1040 Matheson Bldg., Contr. MPA-HP-1, Hawkins Point Project, cargo pier. Plans deposit $20.

BUILDINGS—BA

▲ **N. Y., New York**—SCHOOL—BA 8/12—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, 1, N. Y., general construction, plumbing and drainage, heating and ventilating electrical work and lighting fixtures, Public School 28, St. Nicholas and Amsterdam Aves. W., 155 and W. 156 Sts. $2,444,332. Plans deposit $25 for general construction; $10 for each of the others. CD 7/23/57.

▲ **Pa., Edensburg**—SCHOOL—BA 8/20—General State Auth., 18 and Herr Sts., Harrisburg, State School for retarded children. $4,000,000. Plans deposit $50. C. J. Lappley, Riverview Manor, Harrisburg, archt. A. F. Jones, c/o owner, ch. engr. CD 2/19/57.

HEAVY CONSTRUCTION—LB & CA

▲ **NEW YORK** Dept. Public Works, The Gov. Alfred E. Smith State Office Bldg., Albany, Bids opened 7/17,
Erie Co.—Johnson, Drake & Piper, Inc., 86 Trinity Pl., N. Y., LB **$5,242,215**, est. $5,643,000, Interstate Route No. 506 (New York State Thruway-Niagara Sec.) City of Buffalo: Kensington Expy. Outlet Drain 4.17 mi.
Oswego Co. — S. J. Groves & Sons Co., Syracuse 6, N. Y., LB **$4,821,063**, est. $6,262,000, Interstate Rte. 505 (Central Square-Parish) Central Square-Constantia, S.H. 1243 C.R. No. 12, 32 and 38 9.01 mi. 4.01 acc. mi.
Nassau Co.—Posillico Const. Co., Inc., 618 Old Country Rd., Westbury, N. Y., LB **$1,111,299**, est. $1,344,-000, Glen Cove Arterial, Cont. 2 (Long Island R.R. to Pratt Blvd.) 0.59 mi.
Schuyler & Steuben Cos.—Cold Spring Const. Co., Akron, N. Y., LB **$1,094,316**, est. $1,375,000, Savona-Bradford, S.H. 1102, Bradford-Tyrone, S.H. 1420, 8.79 mi. (Rte. 226).
Erie Co.—Brunner Asphalt & Const., Inc., 237 Kensington Ave., Buffalo 14, N. Y., LB **$709,989**, est. $857,-000, Southwestern Boulevard, S.H. 9269, 4.12 mi. (Rte. 20).
Jefferson Co., John M. Robertson, Inc., 59-61 **Ceperley Ave.**, Oneonta, N. Y., LB **$617,361**, est. $780,000, Cape Vincent-Watertown Pt. 2, S.H. 1164, 4.62 mi. (Rte. 12E).
Columbia Co.—Peckham Road Corp., 50 Hoarlem Ave., White Plains, N. Y., LB **$558,522**, est. $685,000, Hollowville-Crary ville, S.H. 763; Crary ville-State Line, S.H. 762, 4.34 mi. (Rte. 23).
St. Lawrence Co.—Theodore Zoli Const. Co., Inc., 46 E. Main St., Box 336, Torrington, Conn., LB **$414,181**, est. $523,000, Canton-Pierrepont, S.H. 1126 (Rte. 68) 1.10 mi.
Dutchess Co.—John Arborio, Inc., West Cedar St., Poughkeepsie, N. Y., LB **$349,212**, est. $398,000,

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways **$44,000**; other public works $73,000; industrial buildings **$93,000**; other buildings $344,000. Also Foreign projects of $100,000 and more in size of Interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England	Middle West
Middle Atlantic	West of Mississippi
South	Far West

PROPOSED WORK

Water Supply	Public Buildings
Sewers, Waste Disposal	Mass Housing
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.

BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

SOON LETS CONTRACT: SLC

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily Issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over
ENR	Engineering News-Record
CD	Construction Daily

For additional reports see Construction Daily.

Pleasant Valley-Washington Hollow, S.H. 748; Washington Hollow-Millbrook, S.H. 609, 3.70 mi. (Rte. 44).
Montgomery Co.—C. P. Ward, Inc., 700 Hollenbeck St., Rochester 21, N. Y., LB **$712,992**, est. $748,000, Chili Rd., Pt. 1, S.H. 254; Howard Rd., S.H. 9350; Rapids-Rochester, S.H. 401, 1.19 mi. (Rtes. 33A & 47).
Chemung & Tioga Cos.—Dalrymple Gravel & Cont. Co., Inc., Elmira, N. Y., LB **$1,705,151**, est. $2,107,000, Waverly-Lockwood, S.H. 107B, Lockwood-Van Etten Pts. 1 & 2, S.H. 8224, 7.24 mi. (Rte. 34).
St. Lawrence Co.—D. A. Collins Const. Co., Inc., Box 191, Mechanicville, N. Y., LB **$545,574**, est. $629,000, elimination of grade crossing of the New York Central R.R. with Richville-DeKalb Jct. Pts. 1 & 2, S.H. 8476-9236 (Bairds Crossing) (Rtes. 11 & 87) 0.72 mi., 0.17 acc. mi.
MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,
Contee Sand & Gravel Co., Laurel, Md., LB **$908,412** (7 bidders) P-631-25 and 26-320, three multiple span plate girder and steel beam bridges, Johnson Hanson Hy., Landover Rd., Prince George Co. Bids July 15. CD 7/3.

BUILDINGS—LB & CA

▲ **Metzger Constr. Co.**, 429 Carlton St., Buffalo, N. Y LB **$1,500,000**, 3 story HOSPITAL, CHEEKTOWAGA, N. Y. St. Joseph's Community Hospital, Inc., 3580 Harlem Rd., Buffalo, N. Y. Bids June 27. CD 6/24.
▲ **University Estates, Inc.**, 260 E. 161 St., New York 51, N. Y. Owner Builds, **$1,000,000**, 6 story APARTMENT, University Ave., northeast corner of 185 St., NEW YORK, N. Y. Lee Skillman, 322 E. 149 St., New York 51, N. Y., archt. CD 6/9.
▲ **Cortlandt Gardens, Inc.**, 3957 Provost Ave., New York 66, N. Y. Owner Builds, **$1,000,000**, 6 story APARTMENT, Van Cortlandt Park East, sec. of East 230 St., NEW YORK, N. Y. CD 4/8.
▲ **Gilbert Olsen Co., Inc.**, Rockville Centre, New York, CA **$1,323,700**, general contract JUNIOR HIGH SCHOOL, Millburn Ave., UNIONDALE, N. Y. Bd. Educ., Uniondale School Dist. (U.F.D. 2), Town of Hempstead, Uniondale High School, Uniondale, N. Y. Bids June 17. CD 6/3.
▲ **Wm. T. Lyons Co., Inc.**, 28 E. Susquehanna Ave., Towson 4, Md., CA **$1,189,000**, HOME for AGED, TOWSON, MD. Aged Women's and Men's Home, Towson, Md. Jas. R. Edmunds, Jr., 1025 St. Paul St., Baltimore 2, Md., archt.
Anchor Constr. Corp., 4811 Harford Rd., Baltimore 4, Md., LB **$879,600** Base Bid, 1 story, brick, block steel, concrete, Timonium Elementary SCHOOL, Timonium, TOWSON, MD. Baltimore Co. Bd. Educ., Aigburth Rd., Towson 4, Md. Bids July 15. CD 7/3.

SOUTH

HEAVY CONSTRUCTION—LB & CA

† **James T. Copley**, 810 Loudun St., Portsmouth, Va. CA **$858,263**. jet engine maintenance shop, Naval Air Station, NBy 15379, Spec. 15379/58, OCEANA, VA. Dist. P. Wks. Office, 5th Naval Dist., Room 307, Bldg. N-26, U. S. Naval Base, Norfolk, Va. Bids June 26. CD 7/3, under LB.
NORTH CAROLINA—State Hy. Comn., Raleigh,
L. A. Reynolds Co., Inc., 1100 W. 1 St., Winston-Salem, N. C. CA **$783,893**. grading 10.075 mi. relocation of U. S. 421, Proj. 8.17392, Forsyth Co. Bids June 3, awarded July 1. CD 6/10, under LB.
▲† **Ballenger Paving Co.**, Paris, S. C. CA **$1,866,138** fueling facilities, paving and utilities, Marine Corps Air Station, NBy 15369, Spec. 15369/58, CHERRY POINT, N. C. Dist. P. Wks. Office, Fifth Naval Dist., Bldg. N-26, U. S. Naval Base, Norfolk, Va. Bids June 24. CD 6/27, under LB.
† **L. T. Zoby & Son**, 1088 W. 42 St., Norfolk, Va. CA **$964,370**. heating plant and distr. system, Naval Air Station NBy 15382, Spec. 15382/58, Harvey Point, HERTFORD, N. C. Dist. P. Wks. Office, Fifth Naval Dist. U. S. Naval Base, Norfolk 11, Va. Bids June 19. CD 6/23, under LB.
▲ **Thorington Constr. Co., Inc., & Alfred Spear (Individual)**, Box 10, Richmond, Va., CA **$6,494,432**, constr. tunnel with 2 ventilation bldgs., superimposed thereon and 2 open ramp sections related changes, in existing streets, storm sewers, detours and incid. items 0.43 mi. in Fort Lauderdale at New River, FAP No. U-003-3 (28), Job No. 8601-204 SR 5 (USL) Broward Co., FLORIDA, State Rd. Dpt., Tallahassee, Fla. Bids June 26, awarded July 16. CD 7/1, under LB.
▲ **Hebert Brothers**, Box 448, Plaquemine, La., LB **$1,833,250**. (2 bidders) water distr. system, NAPOLEONVILLE, LA. Parish Police Jury, Waterworks Dist. 1, Napoleonville, La. Bids July 10. J. B. McCrary Eng. Corp., Atlanta Federal Savings Bldg., Atlanta, Ga., engrs.;
R. D. Cole Mfg. Co., Newman, Ga., LB **$139,240** (2 bidders) three elevated steel tanks (Napoleonville, La.);
Badger Mfg. Co., 4545 W. Brown Deer Rd., Milwaukee, Wis., LB **$75,871** water meters (Napoleonville, La.).

BUILDINGS—LB & CA

R. R. Richardson & Co., 25th and Newport Sts., Norfolk, Va. CA **$959,218**. 100 unit low rent Public

HOUSING Proj. VA- 12-1, SOUTH NORFOLK, VA. South Norfolk Redevelopment & Housing Auth., 10 Admirals Rd., South Norfolk, Va. Bids June 18. CD 6/23, under LB.

Harry B. Graham Co., 216 3 NE., Charlottesville, Va. LB $911,592 STUDENT CENTER, WILLIAMSBURG, VA. College of William and Mary, Williamsburg, Va. Bids July 15. CD 9/24/53.

▲ S. J. Curry & Co., Box 1436, Albany, Ga., CA $1,962,835. Alachua GENERAL HOSPITAL, GAINESVILLE, FLA. Bd. Hospital Trustees, Gainesville, Fla. Bids June 5. Awarded July 10. CD 6/13.

▲ Robert L. Turchin, Inc., 1835 Purdy Ave., Miami Beach, Fla. CA $1,500,000, 4 story, 260x260 ft. "Montmarte" APARTMENT HOTEL, 4775 Collins Ave., MIAMI BEACH, FLA. Montmarte Hotel and Gen. Constr., Miami Beach, Fla. Melvin Grossman, 324 Mercantile Bank Bldg., Miami Beach, Fla., archt. Sloan Eng. & Assocs., 1644 N.E. 123 St., Miami Beach, Fla., struc. engrs.

▲ Hudleu Corp., c/o Milton Huddleston, 903 Columbiana Rd., Birmingham 9, Ala. Owner Builds. $6,600,000. 260 brick veneer HOMES, Rocky Ridge Rd., BIRMINGHAM, ALA.

▲ Keller Constr. Corp., Box 439 and 7900 Palm St., New Orleans, La. CA $2,091,240 with Alternates 1 and 2, HOSPITAL, incl. ACCESSORY BLDG., MARRERO, LA. Hospital Service Dist. No. 1, City Hall, Westwego, La. Bids June 25. CD 7/7, under LB.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

▲ O., Eastlake—BA 8/4—Village, Village Hall, Sections 1-A, 2-A, 2-B, 4, 5-A and 7, storm trunk sewers, combined or individual bids, $1,588,000. Plans deposit $20. Morris E. Nall & Assoc., 528 Union Bldg., Cleveland, Zone 15, engrs. CD 2/28/57.

BUILDINGS—BA

▲ Mich., Lansing—SCHOOL—BA 8/13—Bd. Educ., 419 N. Capitol St., Everett High School. $4,000,000. O. J. Munson Assoc., 1110 S. Penn Ave., archts. CD 7/3/57.

BUILDINGS—SLC

▲ Ind., Warsaw—PLANT—R. R. Donnelley & Sons, 350 E. Cermak St., Chicago, Ill., soon lets contract 1 story, 51,800 concrete block printing plant with tectum roof deck. $1,000,000. Shaw, Metz & Dolio, 208 S. LaSalle St., Chicago 4, Ill., archts.-engrs.

HEAVY CONSTRUCTION—LB & CA

▲ Samuel N. Zarpan, 1812 Wabash Ave., Pittsburgh, Pa., CA $1,772,900. Cleveland area Nike site, Painesville, Lake Co., OHIO. U. S. Eng., 925 New Federal Bldg., Pittsburgh 14, Pa. J. Gordon Turnbull, 2630 Chester Ave., Cleveland 14, O., engr. CD 7/10, under LB.

▲ A. L. Jackson Co., 210 W. Washington, Chicago 6, Ill. CA $14,730,374. constr. 16 settling basins and outlet control substructure for General District Filtration plant, work is located within a cofferdam north of Navy Pier and east of Lake Shore Dr., CHICAGO, ILL. City, City Hall, Chicago, Ill. Bids June 6. CD 6/11, under LB.

▲ Robert R. Anderson Co., 4550 W. Patterson St., Chicago, Ill. CA $5,246,310, grade separation at Northwest Expressway and Jefferson Park R.R. Station BU-G 265 (17) and steel bridges, one for railroad and one for Northwest Expressway, BU-265 (17) CHICAGO, ILL. Cook Co. County Bldg., Chicago, Ill. Bids July 8, awarded July 15. Grand total $9,484,315. CD 7/18, under LB.
W. E. O'Neil Constr. Co., 2751 Clybourn Ave., Chicago, Ill., CA $3,128,098, 2 railroad grade separations, Chicago and Northwest & Milwaukee Rd. at Mayfair St., Northwest Expressway, BU 265 (14) (Chicago, Ill.);
Allied Structural Steel Co., 20 N. Wacker Dr., Chicago 6, Ill., CA $841,999. steel only for triple grade separation job Northwest Expressway, BU 265 (14) (Chicago, Ill.);
Philip Zweig & Co., 2100 S Ave., Gary, Ind., CA $267,908 steel only for BU-G 265 (17) (Chicago, Ill.).

▲ Kenny Constr. Co., 3220 Oakton St., Skokie, Ill., LB $1,375,150. 6,800 lin. ft., incl. 700 ft. river crossing, Calumet Intercepting Sewers, CHICAGO, ILL. Metropolitan Sanitary Dist. of Greater Chicago, 100 E. Erie St., Chicago 11, Ill. CD 3/4;
T. F. Hanley Corp., 1503 S. Michigan St., Chicago, Ill., LB $316,364. secondary treatment plants, Racine Ave. Station, Stickney Station and North Branch Station (Chicago, Ill.).

▲ MICHIGAN—State Hy. Dpt., John C. Mackie, state hy. comr., Stevens T. Mason Bldg., Lansing, Mich.—Denton Constr. Co., 2415 Mack Ave., Grosse Pointe, Mich., CA $1,228,415, concrete pavement, concrete base course, wid'n., b. conc. surf., curb, gutter 5.844 mi. US-10 and M-74. DF 73073 C1-R (DF 141 6) DF 73073 C2-U (DF 141 5), Saginaw Co.; Mich.—Frank J. Knight Co., 23845 Sherwood, Center Line, Mich., CA $1,368,083, grading, drainage structures base course wid'n., b. conc. surf. 5.18 mi. M-102. Livonia-Detroit, DU 82141 C1-U (DU 397 5), etc., Wayne and Oakland Counties. CD 7/10, under LB.

▲ Thomas H. Currie Co., 2531 Conner, Detroit, Mich., CA $1,502,696, taxiways and aprons, Detroit-Wayne County Airport, DETROIT, MICH. Wayne Co. Bd. Rd. Comrs., Rm. 726, City-County Bldg., Detroit, Mich. Bids June 9. CD 6/19, under LB.

TRU-LAY *flexible* PUSH-PULLS
FOR
Remote Control Jobs
on a great variety of
Construction Equipment

Adaptability to all sorts of mechanical situations explains, in large measure, the wide-spread use of TRU-LAY PUSH-PULLS on tractors and their accessories, power shovels, winches, road graders, road oilers, dump trucks, snow plows, engine-driven pumps, rock crushers and other construction equipment.

These dependable Push-Pulls are used for the remote control of hydraulic and air valves, brakes, clutches, transmissions, throttles, chokes, governors, power take-offs, and many other applications.

TRU-LAY PUSH-PULLS are precision products, not gadgets. They provide positive remote-action whether anchorages are fixed or movable . . . for light loads or loads up to 1,000 lbs. . . . and they are effective over short or long distances, up to 150 feet or more.

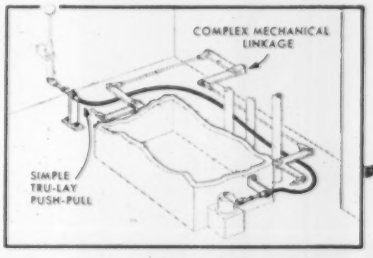
TRU-LAY PUSH-PULLS are dependable and accurate even under the most adverse conditions

They perform effectively under extremes of heat or cold . . . from jet engine temperatures to 70° below zero F. The inner, working member (lubricated for life during assembly) is fully protected by the tough, flexible conduit. Abrasive dusts, dirt and moisture are sealed out. Fittings are cold-swaged to make them integral parts of the control unit. It is a matter of record that we have never heard of a TRU-LAY *flexible* PUSH-PULL wearing out in normal service. Use of these versatile, simple and rugged controls increases ease of operation and means the virtual elimination of maintenance.

Advantages of Tru-Lay Push-Pull flexibility and simplicity are pictured below

Simplicity vs Complexity

Compare the TRU-LAY PUSH-PULL cable in illustration with the mechanical linkage. PUSH-PULLS are simple, have but one moving part, are noiseless and give lifetime service accuracy. Linkages are complex, made of many parts; they wear at many points. Their use brings increased backlash, lost accuracy and vibration rattles.



"Solid as a rod but *flexible* as a wire rope" is a good description of TRU-LAY PUSH-PULL REMOTE CONTROLS. This flexibility makes it possible to snake around obstructions . . . permits the ideal arrangement of all control elements . . . greatly simplifies installation of controls by reducing the number of working parts . . . damps out noise and vibration. Versatile, accurate, adaptable, rugged . . . they are the ideal remote controls for construction equipment.

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BUILDINGS—LB & CA

▲ **Charles V. Maescher & Co., Inc.,** 2106 Florence Ave., Cincinnati, O., LB Approx. **$2,000,000** (4 bidders) 2 STORES, at Kenwood Plaza Shopping Center, CINCINNATI, O. James R. Williams Investment Co., Union Trust Bldg., Cincinnati, O. Bids July 8. CD 6/25.

▲ **S. N. Nielsen Co.,** 3059 Augusta Blvd., Chicago, Ill., CA **$6,000,000,** 364 unit APARTMENT, Lake Shore Dr. north of 74 St., CHICAGO, ILL. Owner, c/o Samuel Gensburg, 1725 W. Diversey Ave., Chicago, Ill. Henry Dubin, 228 N. La Salle St., Chicago, Ill., archt.

▲ **Fred Berglund & Son,** 8410 S. Chicago Ave., Chicago 17, Ill., CA **$3,524,584,** 2 story HIGH SCHOOL with three wings, DES PLAINES, ILL. Maine Twp. School Dist. 207, Des Plaines, Ill. Childs & Smith, 20 N. Wacker Dr., Chicago 6, Ill., archts. Grand total $5,530,084:
George D. Hardin, 2130 S. Michigan St., Chicago 16, Ill., CA **$543,760,** plumbing work for high school (Des Plaines, Ill.);
O. A. Wendt, 1655 W. Fullerton St., Chicago 14, Ill., CA **$453,631,** heating work for high school (Des Plaines, Ill.);
Robert Irsay, 3130 N. St. Louis St., Skokie, Ill., CA **$378,600,** ventilating work for high school (Des Plaines, Ill.);
J. Livingston, 333 N. Michigan St., Chicago 1, Ill., CA **$629,500,** electrical work for high school (Des Plaines, Ill.).

▲ **R. H. McManus & Co.,** 16100 W 8-Mile Rd., Southfield, Mich., Owner Builds, **$6,000,000.** twelve 2 story APARTMENTS, Island Dr., ANN ARBOR, MICH.

Davison Obenauer, 16802 Hamilton St., Highland Park, Mich., Owner Builds, **$800,000.** 5 story brick APARTMENT, South Forest, ANN ARBOR, MICH. Kilgore & Samson, Royal Oak, Mich., archts.

▲ **Atkin-Fordon Co.,** 7360 W. Chicago St., Detroit, Mich., CA **$1,487,000.** general contract JUNIOR HIGH SCHOOL, Oakwood Blvd. near Rotonda Dr., DEARBORN, MICH. City Bd. Educ., Dearborn, Mich. Bids July 9. CD 6/26.

Erickson & Lindstrom, Sill Bldg., Flint, Mich., CA **$818,653,** CHURCH and SCHOOL, Ballenger Hy., FLINT, MICH. St. Paul Lutheran Parish, Flint, Mich. Earl L. Confer, 14000 Strathmore, Detroit, Mich., archt. CD 7/26/56.

WEST OF MISSISSIPPI

BUILDINGS—BA

▲ Mo., Kansas City—HOUSING—BA 8/12—Kansas City Housing Auth., 1220 Independence Ave., Kansas City, Mo., Pennway Plaza Housing Proj., 250 units in 42 bldgs., 2 story, bsmnt., masonry constr., face brick, concrete block, precast concrete. Over $3,000,000. Plans deposit $50. Tanner & Mitchell, 310 Ward Parkway, Kansas City 12, Mo., archts. CD 5/6, under LB.

BUILDINGS—SLC

▲ Neb., Omaha—DISTRIBUTION CENTER — Safeway Stores, Inc., 111 S. 46th St., soon lets contract distr. center, 72nd and F St. $6,000,000. Leo A. Daly, 633 Ins. Bldg., Zone 2, archt. CD 6/30.

HEAVY CONSTRUCTION—LB & CA

▲ **Forcum-Lannom, Inc.,** Dyersburg, Tenn. LB **$1,844,900,** est. $1,750,000. (7 bidders) Contr. No. 1, complete sewage treatment plant, LITTLE ROCK, ARK. Sewer Comn., City Hall, Little Rock, Ark. Bids July 16. CD 6/19.

▲ **OKLAHOMA**—State Hy. Dpt., Capitol, Oklahoma City, Zone 5,
Okla.—**Southern Constr. Co.,** 1405 W. Reno St., Oklahoma City, Okla., CA **$154,495,** est. $177,904, concrete, steel bridge over Washita River, Hy. 30 near Reydon, Roger Mills Co.; CA **$162,076,** est. $162,472, 2 concrete, steel bridges US 66 near Sapulpa, Creek Co.;
Okla.—**Duard Pyle,** 3409 Classen St., Oklahoma City 18, Okla., CA **$1,911,956,** est. $2,128,525, concrete, steel bridge over S Canadian River, I-40 at Bridgeport, Canadian Co.;
Okla.—**E. H. Holtzen,** Enid, Okla., CA **$79,809,** est. $92,677, bridge, etc., farm to market road at Enid, Garfield Co.;
Okla.—**J. A. Raines,** 2311 Callahan St., Muskogee, Okla., CA **$361,297,** est. $353,920. 4 concrete, steel bridges on U.S. 64 near Gore, Sequoyah Co.;
Okla.—**Moore Bridge Co.,** Ada, Okla., CA **$1,252,792** est. $1,461,716, 2 underpasses and 10 bridges on I-35 south of Payne Co. Line, Guthrie Co.;
Okla.—**Gragg Constr. Co.,** Henryetta, Okla., CA **$476,545.** est. $541,394, 6 overpasses, 3 underpasses and 2 bridges I-35, Payne Co.;
Okla.—**Frank Newell & Sons,** Box 947, Muskogee, Okla., CA **$80,677,** est. $89,282 (4 bidders) 2 overpasses on US 62 in Muskogee, Muskogee Co.;
Okla.—**Ajac Constr. Co.,** 3114 N. May Ave., Oklahoma City, Okla., CA **$179,957,** est. $201,942, 3 concrete, steel bridges, U.S. 281, Anadarko, Caddo Co.;
Okla.—**Brewer & McMichael,** Holdenville, Okla., CA **$250,862,** est. $291,021, 5 underpasses and 2 bridges I-35 north of Oklahoma Co. Line, Guthrie Co.;
Okla.—**R. R. Tway, Inc.,** 710 N.E. 19S., Oklahoma City 5, Okla., CA **$906,826,** est. $915,430, 2 concrete, steel bridges over N. Canadian River I-35, Oklahoma Co. Bids July 15. Grand total $5,817,292. CD 7/3.

▲ **OKLAHOMA**—State Hy. Dpt., Capitol 5, Oklahoma City, Bids opened June 30,
Metropolitan Paving Co., 300 South Indiana St., Oklahoma City, Okla., LB **$792,200,** est. $645,956, clearing right of way for four lane I-40 near Tinker Field, LB **$1,246,232,** est. $946,001, grading, drainage, stab. aggreg. base and asph. conc. surf. 1.519 mi. I-40 (four lane) near Tinker Field, LB **$2,265,110,** est. $1,920,152, grading, drainage, stab. aggreg. base and b. conc. surf. 3.095 mi. I-40 near Tinker Field, LB **$477,131,** est. $413,928, two underpasses and retaining walls on I-40 for four lane near Tinker Field, Oklahoma Co. G. H. Bittle, Capitol 5, Oklahoma City, engr. CD 6/20.

▲ **OKLAHOMA**—State Hy. Dpt., Capitol, Oklahoma City, Zone 5,
Okla.—**Cohenour Constr. Co.,** Gilberg Bldg., Ardmore, Okla., CA **$109,261,** est. $109,266 (8 bidders) stab. aggreg. base, b. conc. surf. 2.035 mi. Wid'n. US 69 Bryan Co.; CA **$359,415,** est. $359,432 stab. aggreg. base and b. conc. surf. 6.999 mi. US 69 Bryan Co.; CA **$106,266** est. $106,267 (8 bidders) stab. aggreg. base, b. conc. resurf. 1.968 mi. US 69 Bryan Co.; CA **$103,408,** est. $103,412. (8 bidders) stab. aggreg. base, b. conc. wid'n. 1.847 mi. US 69, Bryan Co.;
Okla.—**Tri State Constr. Co.,** 101 S. W. 11 St. Oklahoma City, Okla., CA **$253,865,** est. $308,025 (7 bidders) grading, draining 6.021 mi. U. S. 64 near Gore, Sequoyah Co.; CA **$91,497** est. $84,067 (1 bidder) grading, draining, 2 bridges 6.001 mi. on county road, Okfuskee Co.;
Okla.—**Frix & Foster,** 1200 S. Cherokee St., Muskogee, Okla., CA **$951,306,** est. $1,054,168 (9 bidders) grading, draining 6.677 mi. I-35 north of Okla. Co. Line, Guthrie Co.;
Okla.—**S. E. Evans,** Box 903, Fort Smith, Ark., CA **$711,981,** est. $688,328 (6 bidders) grading, draining 5.282 mi. I-35 Guthrie Co.;
Okla.—**Pettigrew Constr. Co.,** 1716 Hendricks Blvd. Fort Smith, Okla., CA **$475,002,** est. $551,221 (12 bidders) grading, draining 6.383 mi. I-35 Guthrie Co.;
Okla.—**Pool Constr. Co.,** Box 540, Shawnee, Okla., CA **$268,965,** est. $249,567 (3 bidders) asph. stab. base, b. conc. 1.03 mi. US 66, Creek Co.;
Okla.—**C. D. Hinkle,** 3427 N. W. 50 St., Oklahoma City, 11, Okla., CA **$78,435,** est. $93,611 (7 bidders) stab. aggreg. base, b. conc. surf. 5.466 mi. county road at Nicoma Park, Oklahoma Co.;
Okla.—**Ben Haskins,** Cordell, Okla., CA **$127,355,** est. $149,095, grading, draining 5.058 mi.—U. S. 281, Caddo Co. Grand total $3,636,757. Bids July 15 CD 7/3.

▲ TEXAS—State Hy. Comn., Austin, bids opened 7/15,
Tex.—**G. C. McBride, Inc.,** 302 Medical Arts Bldg., Waco, Tex. LB **$249,371,** grading, etc. 10.115 mi. Hy. U.S. 96, Proj. DF 159 (7) & DS 816 (2) Shelby Co. CD 6/25; LB **$181,774,** grading, etc. 8.695 mi. Hy. U.S. 69. Proj. DF 606 (12) Angelina Co., CD 6/30;
Tex.—**Gilvin-Terrill, Inc.** 413 E. 3 St., Amarillo, Tex. LB **$307,497.** grading, etc. 4.588 mi. Hy. U.S. 66 Proj. R RD 17 (1) Potter and Carson Counties;
Tex.—**Joe Davidson & R. C. Buckner,** P.O. Box 609, Jacksonville, Tex. LB **$511,138,** grading, etc. 9.729 mi. Hy. SH 34. Proj. DS 1156 (3) & DUS 1156 (4) Hunt Co.;
Tex.—**Border Constr. Co. & Ross C. Walters,** P.O. Box 647, Laredo, Tex. LB **$1,440,927,** grading, etc. 11.931 mi. Hy. IH 35. Proj. I 35-2 (14) 70, LaSalle Co.;
Tex.—**R. W. McKinney,** P.O. Box 90, Nacogdoches, Tex. and **T. L. Jones,** Ruston, La. LB **$1,763,763.** concrete pavement, etc. 6.965 mi. Hy. IH 45. Proj. K-45-3 (14) 221; Navarro Co., all foregoing CD 6/30;
Tex.—**Strain Bros., Inc.,** Drawer, 1631, San Angelo, Tex. LB **$383,362.** hot mix b. conc. etc. 16.477 mi. US 277 and 82. Proj. DF 432 (10) Archer Co.;
Tex.—**Killian-House Co.,** 4600 Broadway, San Antonio, Tex. LB **$1,818,927,** grading, etc. 5.073 mi. Hy. IH 35. Proj. I 35-2 (19) 145 Bexar Co.;
Tex.—**Cecil Ruby Co., Inc.,** 910 Brown Bldg., Austin, Tex., LB **$428,444,** grading, etc., 4.707 mi. Hy. US 277, Proj. DF 392 (9) Val Verde Co., all foregoing CD 6/25.
Tex.—**Fred Hall & Son,** P.O. Box 488, Valley Mill, Tex., LB **$354,882,** grading, etc., 26.662 mi. Hy. FM 436, 437, 935 and 1237, Proj. C 231-16-10, C 590-4-8 etc., Bell Co. CD 7/7.

H. G. Nichols, Willis Thames & Sandy Hawthorne, 1872 Calder St., Beaumont, Tex. Owner Builds. **$85,000.** storm sewers. **$900,000,** sanitary sewers, in 400 acre tract, BEAUMONT, TEX. CD 6/27.

▲† **George A. Fuller Co.,** 3100 W. 8 St., Los Angeles, Calif., CA **$11,762,420.** constr. launching facilities and utilities, Squadron 1, Warren Air Force Base, ENG-25-066-58-154, CHEYENNE, WYO. U. S. Eng., 1709 Jackson St., Omaha 2, Neb. Bids July 15, awarded about July 22. CD 7/17, under LB.

BUILDINGS—LB & CA

G. E. Madsen & Sons, Inc., Sexton Bldg., Minneapolis, Minn., LB **$858,000** (3 bidders), LABORATORY SCHOOL, at Mankato State College, MANKATO, MINN. State Dpt. Admin., 19 State Capitol, St. Paul, Minn. Bids July 17. CD 6/25.

▲ **Minneapolis Gas Co.,** 739 Marquette Ave., Minneapolis, Minn., Owner Builds, **$1,000,000** PROPANE STORAGE PLANT, Winnetka Ave. south of Hennepin County Rd. 9 (New Hope) (24 storage tanks, boiler and compressor equipt. by fall of 1959; 36 addnl. tanks in 1960), MINNEAPOLIS, MINN.

▲† **Henry C. Beck Co.,** First National Bank Bldg., Dallas, Tex., LB **$16,833,000.** Animal Diseases LABORATORY (except elevator) for Dpt. Agriculture, AMES, IOWA. General Services Admin., 18 and F Sts. N.W., Wash. 25, D. C. Bids July 18. CD 5/26.

A **Borchman Sons Constr. Co.,** 4601 Douglas, Omaha, Neb., LB **$880,000,** Westside HIGH SCHOOL addn.,

OMAHA, NEB. Bd. Educ., Dist. 66, School Bd., 39th and Davenport, Omaha 31, Neb. Leo A. Daly, 633 Ins. Bldg., Omaha 2, Neb., archt. Bids June 26. CD 6/10.

▲† **Brown & Root, Inc.,** Box 3, Houston 1, Tex. CA $1,482,990. constr. addnl. air receivers, incl. fab. and welding 4 carbon steel TANKS, DAINGERFIELD, TEX. Dpt. Navy, Bldg. 16, U. S. Naval Station, New Orleans, La. CD 9/29.

Haggerty, Messmer Co. Bozeman, Mont. LB $950,000. general constr. women's RESIDENCE HALL at Montana State College, BOZEMAN, MONT. Montana State Bd. Educ., Helena, Mont. Bids July 14. CD 6/17.

▲ **C. & D. Co., Saul N. Davidson, Alvin L. Cohen,** c/o William C. Muchow, 1730 Glenarm Place, Denver, Colo., and Nat S. Sachter, 111 Adams St., Denver, Colo., archts. Separate Contracts. $1,500,000. 12 story, bsmnt., 96,000 sq. ft. APARTMENT, DENVER, COLO.

FAR WEST

BUILDINGS—BA

▲ **Calif., Riverside**—SCHOOL—BA 8/25—Riverside High School Dist., 3954 12th St., Arlington Junior High School. $2,000,000. CD 2/17.

HEAVY CONSTRUCTION—LB & CA

† **J. P. Hopkins Co.,** Mercer Island, Wash. CA $729,340, est. $706,123, modify guided missile facilities in Fairchild Defense area, SPOKANE, WASH. U. S. Eng. 1519 S. Alaskan Way, Seattle 4, Wash. Bids July 9. CD 7/17, under LB.

BUILDINGS—LB & CA

▲ **Paulsen Constr.,** 1425 Jefferson St., Salt Lake City, Utah, LB $1,358,165, Men's RESIDENCE HALL "G" and "H", ground imprvs., outside utilities, Brigham Young University, PROVO, UTAH Brigham Young University, University Hill, Provo, Utah. Bids July 15. CD 7/9.

G. E. Teufel Co., White-Henry-Stuart Bldg., Seattle 1, Wash. LB $985,000 (13 bidders) general constr. five 116,000 sq. ft. masonry buildings for HIGH SCHOOL, with steam heating sys., BELLEVUE, WASH. School Dist. 405, Bellevue, Wash. Bids July 15. CD 6/19.

▲ **Fluor Corp. Ltd.,** 2500 Atlantic St., Los Angeles, Calif., CA Est. $10,000,000. OIL REFINERY, VANCOUVER, WASH. Pacific Cooperatives, Walla Walla, Wash.

▲ **M&K Corp.,** 519 California St., San Francisco, Calif. CA $4,644,000. 2 story, bsmnt., rein.-con. 7 floors, steel frame STUDENT UNION, BERKELEY, CALIF. University of California, Bd. Regents, Admin. Bldg., Berkeley, Calif. CD 6/18, under LB.

▲ **Howard J. White, Inc.,** 870 Charleston Rd., Palo Alto, Calif., LB $2,162,726, Del Mar HIGH SCHOOL near county hospital, CAMPBELL, CALIF. Campbell Union High School Dist., 151 N. Winchester Rd., Campbell, Calif. Bids July 17. CD 6/24.

▲ **Robert E. McKee General Contractor, Inc.,** 4700 San Fernando Rd., Los Angeles, Calif., CA $5,459,700 Long Beach COUNTY BLDG., Spec. 1784-G, LONG BEACH, CALIF. Bd. Supervs., Los Angeles Co., 501 Hall of Records, Los Angeles, Calif. Bids July 2. CD 7/7, under LB.

CANADA

BUILDINGS—SLC

▲ **Ont., Toronto**—TEMPLE—Holy Blossom Temple, 1950 Bathurst St., soon lets contract 3 story, bsmnt. 112 x 140 ft., structural steel frame, rein.-con. temple addns., $1,250,000. J. I. Brenzel, 658 Spadina Rd. and John B. Parkin Assocs. 1500 Don Mills Rd., Postal Station "J" Don Mills, assoc. archts. CD 9/6.

ALASKA

BUILDINGS—BA

▲† **Alaska, Juneau**—SCHOOL—BA 8/20—Alaska P. Wks. Dpt. Interior, 123 W. 3rd St., rein.-con. Juneau-Douglas High School addn. Proj. 50-A-238, $1,416,375. Plans deposit $25. L. A. Forrest, 622 Hemlock Way, archt. CD 2/17.

PROPOSED PROJECTS

WATER SUPPLY

▲ **N. Y., Buffalo**—City, Dpt. P. Wks., City Hall, 48 in. water line from Niagara St. and W. Delavan Ave. to Amherst and Grant Sts. $1,200,000. CD 9/18.

▲ **Tex., Abilene**—City, City Hall, water imprvs., incl. terminal storage reservoir (earthen) raw water booster pump station, lake pump station and concrete water supply line, $2,500,000. Freese & Nichols, 407 Dan-ciger Bldg., Fort Worth, Tex., consult. engrs. CD 8/6.

SEWERS, WASTE DISPOSAL

▲ **Ala., Mobile**—City, City Hall, drainage 18,000 acres in SW section of city. $2,500,000.

BRIDGES

▲ **Ind., Indianapolis**—Comrs. Marion Co., Court House, 6-lane main span 38 St. bridge, approaches, Boyd Phelps Inc., K of P Bldg., consult. engr.; 3 bridges over railroad and 2 streams part of same project. Fleck, Quebe & Reid, 1637 N. Illinois, Indianapolis, consult. engrs. Total est. $4,000,000. CD 6/11/56.

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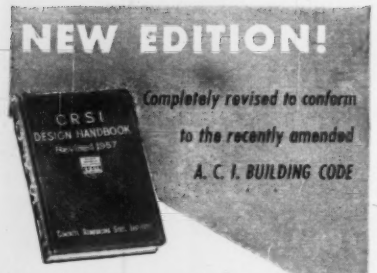

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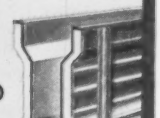

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EARTHWORK, WATERWAYS

▲ **Georgia**—West Georgia Soil Conservation Dist., Carroll County, Carrollton, City Govts. of Carrollton, Temple and Villa Rica, 62,516 acres for watershed protection project, Little Tallapoosa River, approved by Dpt. Agriculture, Soil Conservation Service. $1,693,044.

▲ **Indiana**—Washington Co. Soil Conservation Dist. and Daviess Co. Soil Conservation Dist., Washington, 88,690 acres watershed protection proj. for Prairie Creek, Washington, Daviess and Martin Counties. $2,365,780.

AIRPORTS

▲ **Calif., Oakland**—PASSENGER TERMINAL—Port of Oakland, foot of Grove St., plans by Warnecke & Warnecke, Financial Center Bldg., passenger terminal, Metropolitan Oakland International Airport. $4,500,000. constr. January 1959.

▲ **Miss., Jackson**—AIRPORT—City Council, City Hall, $3,000,000 bond election Aug. 26, airport. CD 3/31/54.

PUBLIC BUILDINGS

▲ **Ala., Bessemer**—SCHOOL—Bessemer Bd. Educ., City Hall, $1,800,000 bond election Sept. 15, elementary and high schools, $1,000,000. Wilmot Douglas, 2922 7th Ave. S., Birmingham, archt. CD 11/18/52.

▲ **Ala., Bessemer**—HOSPITAL—City, City Hall, $1,800,000 bond election Sept. 15, hospital $800,000. CD 7/26/46.

▲ **Ala., Mobile**—AUDITORIUM—City, City Hall, renovation Fort Whiting Auditorium. $1,000,000.

▲ **Alaska, Anchorage**—ADMINISTRATION, etc.—Alaska Methodist University, Anchorage, plans by Manley & Mayer, Anchorage, administration building, dormitory and student union building, $1,000,000. Constr. this year. CD 5/31.

▲ **Calif., Berkeley**—OFFICE—City, City Hall, office building near city hall. $2,000,000.

▲ **Calif., Fullerton**—SCHOOL—Fullerton Union High School Dist., 201 E. Chapman Ave., plans by Wm. H. Harrison, 816 W. 5 St., Los Angeles, Sunny Hills High School, 4 rein.-con. bldgs. $2,300,000. CD 6/11/57.

▲ **Calif., San Francisco**—CIVIC AUDITORIUM—City and San Francisco Co., Dpt. P. Wks., City Hall, $7,225,000 bond election Nov. 4, civic auditorium imprvs.

▲ **Calif., San Francisco**—COURTS BLDG., etc.—City and San Francisco Co., Dpt. P. Wks., City Hall, $22,150,000 bond election Nov. 4 to finance constr. courts bldg. and imprvs. to city hall. CD 11/11.

▲ **Calif., San Francisco**—ART and CLASSROOM, etc.—City College of San Francisco, City and County of San Francisco, 135 Van Ness Ave., plans by Milton T. Pflueger, 580 Market St., 3 story, art and classroom bldg., physical educ. bldg., athletic field, addnl. wings to men's and women's gym. $2,000,000. Huber & Knapik, 1 Montgomery St., consult. engrs. CD 12/17.

▲ **Calif., Yreka**—COLLEGE—Siskiyon Jr. College, 1243 S. Main St., plans by Mario J. Ciampi & Assocs., Allyn C. Martin, Ala, and Paul W. Reiter, 425 Bush St., San Francisco, admin. offices, classroom, arts, science dormitory, near Weed. $2,500,000. Oscar J. Piemme, Warrens Bldg., consult. engr.

▲ **Colo., Denver**—OFFICE—Public Service Co., 15th and Champa, plans by Berne, Muchow, Maume & Polivnick, 1225 Bannock, 10 to 12 story, 229,000 sq. ft. home office bldg., S.E. corner 15th and Welton Sts. $5,000,000. CD 8/3.

▲ **Miss., Biloxi**—HOSPITAL—Biloxi Hospital, Biloxi, hospital, addn. $2,500,000.

▲ **Miss., Pascagoula**—HOUSING—Mississippi Regional Housing Authority No. 8, Pascagoula, 100 unit Carver Village Negro Housing, incl. streets, drives, recreational area and 100 units adjacent to Victor St. $2,800,000.

▲ **Mo., St. Louis**—OFFICE—State of Missouri, James T. Blair, gov., Jefferson City, plans by Hellmuth, Obata & Kassabaum, Inc., 315 N. 10 St., 3 story, bsmnt. office, Washington Ave. and Broadway. $1,450,000.

▲ **O., Lorain**—SCHOOL—Bd. Educ., Lorain, a court ruling has declared a typewritten ballot valid and as a result levy previously reported as failing by 1 vote on May 7 has now officially passed by 1 vote for high school. $4,816,000. Fulton, DeLamotte & Assocs., 6014 Euclid Ave., Cleveland Zone 3, archts. CD 5/13.

▲ **S. C., Charleston**—AUDITORIUM—Greater Charleston Auditorium Comn., municipal auditorium. $2,500,000.

▲ **S. C., Seneca**—HOSPITAL—Oconee County Memorial Hospital Bd. Trustees, 110 bed hospital to replace existing structure, $1,500,000.

▲ **Tenn., Memphis**—HOUSING—Memphis Housing Authority, 700 Adams St., constr. 280 unit public housing, $4,092,917.

▲ **Utah, Ogden**—GYMNASIUM, etc.—Utah State Bldg. Bd. 419 State Capitol, Salt Lake City, plans by Grix, Plowgian & Gessel, 3930 Riverdale Rd., gymnasium and athletic bldg., Weber College. $1,250,000. CD 6/6/57.

▲ **Utah, Salt Lake City**—SCHOOL—Jordan School Dist., Reed H. Beckstead, supt., 9361 S. State St., plans by Bruce J. McDermott, Suite 12, 1400 Foothills Dr., high school, 7200 S. between 7th and 9th E. Over $1,000,000.

COMMERCIAL BUILDINGS

▲ **Calif., Los Angeles**—DWELLINGS—Endo Valle Constr. Co., 23000 Vanowen St., Canoga Park, plans by Duncan & Conroy, 13310 Moorpark, Sherman Oaks, 77 dwellings, Tract 22058. $1,116,600.

▲ **Conn., New Haven and North Haven**—HOUSES—Garry Bldg. Corp., Crossroads Plaza, West Hartford, 200 houses, "Harmac Estates," on New Haven-North Haven Line. $2,000,000.

▲ **Conn., West Hartford**—HOUSES—Proctor Farm Estates, Mountain Rd., 141 houses, 7 streets, "Proctor Farm Estates" Mountain Rd. $1,445,000.

▲ **Conn., Woodbridge**—SYNAGOGUE, etc.—Congregation B'nai Jacob, 347 George St., New Haven, plans by Fritz Nathan, 200 Central Park South, New York N. Y., synagogue, assembly hall, religious school, Rimmon Rd. $1,000,000. Jacob Stern, 3198 Grand Concourse, New York, N. Y., consult. engr., Dr. Walter Duschinsky, 6341 Brompton Rd., Houston, Tex., acoustical engr. CD 8/26.

▲ **Ill., Chicago**—DENTAL SCHOOL, etc.—Loyola University, 6525 N. Sheridan Rd., plans by Barry & Kay, 53 W. Jackson Blvd., dental school and dormitories bounded by Congress Expressway, Oakley Blvd., Harrison St. and Hoyne Ave. $4,000,000.

▲ **La., Lafayette**—BOWLING ALLEY—Bowlarama, Inc., 5043 Lahoma St., Dallas, Tex., 32 lane bowling alley building stores, South College Shopping Center. $1,000,000.

▲ **Mich., Detroit**—HOSPITAL—Woman's Hospital, 432 E. Hancock St., hospital addn. $2,000,000.

▲ **Minn., St. Paul**—OFFICE—Degree of Honor Protective Assn., 389 St. Peter St., 4 story home office bldg., 4th and Cedar Sts. $1,000,000. Constr. 1961.

▲ **N. J., Hackensack**—DEPARTMENT STORE—Bloomingdale Bros., Lexington Ave. and 59 St., New York 22, N. Y., Suburban Dept. Store on 36 acre tract at northeast corner of Rte. 4 and Hackensack Ave. $1,000,000.

▲ **N. Y., New York**—SCHOOL OF ENGINEERING—Cooper Union, Cooper Sq., Fourth Ave. and Seventh St., New York, plans by Voorhees, Walker, Smith & Smith, 101 Park Ave., School of Engineering Bldg. for Cooper Union. $4,000,000. CD 4/4/56.

▲ **O., Cincinnati**—HOUSES—Murphy Homes, Inc., 7945 Hamilton Ave., Mt. Healthy, 300 one floor bsmnt., brick homes, off Compton Rd. $5,850,000. Edw. Niemeier, 4484 Harrison, consult. engr. CD 5/28.

▲ **Tex., Abilene**—CHAPEL, etc.—Hardin-Simmons University, plans by F. C. Olds Co., 325 S. Hickory St., chapel, $1,500,000. CD 12/12; student union bldg., $600,000, CD 11/12/53.

▲ **Tex., Dallas**—SHOPPING CENTER—Dallas West, Bobby Folsom, 3104 Oak Lane, shopping center, along Hampton Rd. between Dallas-Ft. Worth Turnpike and Trinity River, $1,000,000.

▲ **Tex., Houston**—BANK-OFFICE—First City National Bank, 921 Main St., plans by Skidmore, Owings & Merrill, 425 Park Ave., New York N. Y., 40 story bank-office. $17,500,000. Constr. late 1958.

▲ **Tex., Houston**—STORE—The Fed-Mart Stores, c/o Joskes, by the Alamo, Alamo Plaza, San Antonio, department store, Mykawa and Griggs Rds. $1,000,000.

▲ **Tex., Oak Cliff**—HOTEL—J. R. Hill, Developer, 824 N. Marsalis St., Dallas, 16 story hotel, Colorado Blvd. and Ewing St. $2,000,000.

▲ **Wash., Edmonds**—HOUSES—S. Kelstrup, 54 houses in Twin View Estates. $1,000,000.

▲ **Ont., Brampton**—APARTMENTS—Consolidated Building Corp., Ltd., 89 Aveune Rd., Toronto, apartment units. Over $1,000,000. Gurr & Setchell, 3876A Bloor St., W. Toronto, consult. engrs.

▲ **Ont., Toronto**—RESIDENTIAL DEVELOPMENT—Consolidated Building Corp., 89 Avenue Rd., 518 unit residential development, Albion Ave. and Kipling Rd. Over $1,000,000. Constr. in Fall; 525 unit residential development Rathburn Ave. and Highway 27, over $1,000,000. Town Planning Consultants Ltd., 614 Church St., planning consultants.

INDUSTRIAL BUILDINGS

▲ **Fla., Port St. Joe**—PLANT—Michigan Chemical Corp., Saint Louis, Mich., plant to manufacture magnesium oxide from sea water on Gulf County Canal, $4,000,000-$5,000,000.

▲ **Ill., Henry**—PLANT—B. F. Goodrich Chemical Co., 3135 Euclid Ave., Cleveland 15, O., plant addn. to manufacture antiozonant chemical, $1,000,000.

▲ **Ind., Columbus**—FACTORY—Cummins Engine Co., Fifth and Union Sts., 2 story, 260 x 680 ft. marine engine factory, $6,000,000.

▲ **Ind., Huntington**—PRINTING and PUBLISHING CENTER—Our Sunday Visitor, Inc., Huntington, plans by Max Pohlmeyer & Assocs., Charles J. Mallott & John L. Sosenhaimer, 262 Central Bldg., Fort Wayne, 1 and 2 story, 170,000 sq. ft., steel, rein.-con. brick, concrete blocks, etc. printing and publishing center, 14-acre tract on U.S. No. 24 and Ind. Rtes. 9 and 37 adjacent to Erie Railroad. $3,000,000. CD 11/7.

UNCLASSIFIED

▲ **Alabama**—POWER LINES—Wheeler Elec. Co-operative, Hartselle, expand power lines in Marshall, Lawrence and Morgan Counties, $1,452,000. CD 3/17/54.

▲ **Alaska, Homer**—FACILITIES—Homer Elec. Assn., Homer, transmission facilities of West Coast of Kenai peninsula. $1,085,000.

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

STREETS AND ROADS

August 7 New Hampshire August 11 Connecticut

▲ **Mass., Boston**—BA 8/14—Commonwealth of Mass., Metropolitan Sewer Comn., Constr. Div., 20 Somerset St., Boston, Contr. 270, constr. caisson for pump station, sub-structure, Deer Island Sewage Treatment Plant, involving rock excav., tunnels, etc., $1,620,000. Plans deposit $20. CD 1/15/52.

BUILDINGS—BA

▲ **Conn., Hartford**—STORE—BA 8/12—G. Fox & Co., 960 Main St., department store addn., bridge over street, $5,000,000. Abbott, Merkt & Co., archts., and Edward F. Ashley, engr., both 10 E. 41 St., New York, N. Y. CD 7/11.

BUILDINGS—LB & CA

▲ **Fusco-Amatruda Co.**, 59 Amity Rd., New Haven, Conn., CA $1,962,185. HIGH SCHOOL, Rubber Ave., NAUGATUCK, CONN. Town, Naugatuck, Conn. CD 7/9.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

August 5 Maryland August 7 New Jersey

STREETS AND ROADS

August 5 Maryland, New Jersey

HEAVY CONSTRUCTION—LB & CA

▲ **Federal Pacific Electric Co.**, 5815-3rd, San Francisco, Calif., LB $2,665,000, combination Schedule 2 and 3; 24,230 KV power circuit breakers for Niagara Switchyard in Lewiston, Niagara Co. Contr. No. NP 20, NEW YORK Power Authority of State of New York, The Coliseum Tower, 10 Columbus Circle, New York 19, N. Y. Bids July 22. CD 7/3.

Allis Chalmers Co., 1126 S. 70, Milwaukee, Wis., LB $1,310,000, Schedule 1, 34,115 KV power circuit breakers (New York).

▲ **Gull Contg. Co., Inc.**, 33-15 Lawrence St., Flushing, N. Y., LB $1,715,370 (9 bidders), approach roadway sys., Section 1, in New York for lower level expansion of George Washington Bridge, Contr. GWB-190.003, NEW YORK and NEW JERSEY, Port of New York Authority, 111 Eighth Ave., New York 11, N. Y. Bids July 22. CD 6/23.

▲ **NEW JERSEY**—State Hy. Dpt., 1035 Parkway Ave., Trenton,

N. J.—**Kingston Bituminous Products Co., Inc.**, Kingston, N. J., LB $1,504,777 (5 bidders) wid'n., resurf. 6.249 mi. Rte. 26, Sections 4D and 5C, South and North Brunswick Twps., Middlesex Co.;

N. J.—**D. and L. Contg. Co.**, 1781 Winfield St., Rahway, N. J., LB $289,195 (5 bidders) dualization of Rte. 18, drainage imprvs. Milltown Rd., East Brunswick Twp., Middlesex Co. Bids July 23. CD 6/30.

▲† **Glasgow, Inc.**, Wrightstown, N. J., CA $2,886,543 A/C maintenance docks, apron hangar access, wash rack, jet fuel facilities and utilities, McGuire Air Force Base, ENG-36-109-58-51, WRIGHTSTOWN, N. J. U. S. Eng. 2635 Abbottsford Rd., Phila. Pa. Berger Assocs., 2 and Locust Sts., Harrisburg, Pa., engrs.-archts. CD 3/12.

▲† **Malan Constr. Corp.**, 2 Park Ave., New York, N. Y. CA $2,204,123, AAA Facilities addns., alterations, incl. Bucks, Chester, Montgomery and Delaware Counties, Pa. and Burlington, Camden and Gloucester Counties, N. J., Phila. Defense Area, ENG-36-109-58-50, PENNSYLVANIA and NEW JERSEY. U. S. Eng., 2635 Abbottsville Rd., Phila., Pa. CD 6/27, under LB.

▲ **Pipe Line Constr. & Drilling Co.**, Camp Hill, Pa., CA $7,002,800. gas line facilities 56.6 mi. 20-in. No. 1 gas line, PENNSYLVANIA and NEW YORK. New York Natural Gas Corp., No. 2 Gateway Center, Pittsburgh, Pa. R. Duvall, c/o owner, in charge of constr.

▲ **Wright Contg. Co.**, Brookhaven Rd., Columbus, Ga., CA $3,165,000, Section 2, Susquehanna Water Supply Proj., involving 30,230 ft. 96 in. concrete raw water pipe for Montebello Filtration Plant to Kenwood Ave., BALTIMORE, MD. City, Bureau Water Supply, 505 Municipal Bldg., Baltimore 2, Md. Bids July 9. CD 7/14, under LB.

BUILDINGS—LB & CA

▲ **Castagna & Son, Inc.**, 2110 Northern Blvd., Manhasset, N. Y., CA $1,693,394, SENIOR HIGH SCHOOL, WEST BABYLON, N. Y. Bd. Educ., West Babylon, N. Y. CD 4/10.

▲ **Cuzzi Bros. & Singer, Inc.**, 10 So. Second Ave., Mt. Vernon, N. Y., CA $2,000,000, Albertus Magnus HIGH SCHOOL, BARDONIA, N. Y. Archdiocesan Bldg. Comn., 451 Madison Ave., New York 22, N. Y. Bids July 9. CD 6/20.

▲ **Isadore Rosen & Sons**, 215 E. 204 St., New York 58, N. Y., Owner Builds, $1,500,000, 6 story APARTMENT, east side University Ave. between 181 and 182 Sts., NEW YORK, N. Y.

▲ **157 E. 57 St. Corp.**, c/o Joseph P. Blitz, 545 Madison Ave., New York 22, N. Y., Owner Builds, $1,500,000, 18 story APARTMENT, northwest corner of 3rd Ave. and 57th St., NEW YORK, N. Y.

▲ **Colmar Constr. Co.**, 364 Gold St., Brooklyn 1, N. Y., CA $2,880,810, general constr. SENIOR HIGH SCHOOL, Central Park Rd., PLAINVIEW, N. Y. Bd. Educ., Plainview, N. Y. Knappe & Johnson, 2 Overhill Rd., Scarsdale, N. Y., archts. Grand total $3,616,325. CD 11/12;

Berwind & Co., 220 Nassau Blvd., Garden City, N. Y., CA $349,340, heating and ventilating (Plainview, N. Y.);

Arc Electric Co., 739 Second Ave., New York 16, N. Y., CA $386,175, electrical (Plainview, N. Y.).

▲ **Robert Jayne**, 113 Holmes St., Boonton, N. J., Owner Builds, $3,500,000. 175 HOUSES on 100 acre tract on Rte. 53, HACKETTSTOWN, N. J.

▲ **Socony Constr. Co.**, General Delivery, New Brunswick, N. J., Owner Builds, $5,000,000. 440 HOMES, Easton Ave., MIDDLEBUSH, N. J.

▲ **Isadore & Harold Strauss**, c/o Michael Weinstein, 700 Mattison Ave., Asbury Park, N. J., Owner Builds. $3,250,000. 150 HOUSES, Edgeware Place and Wakefield Rd., NEPTUNE, N. J.

▲ **John J. McDonnell**, McClatchy Bldg. Upper Darby, Pa. LB $1,849,000 general contract SENIOR HIGH SCHOOL, athletic field, swimming pool, tennis courts and storm sewers, BRISTOL, PA. Bristol Twp. School Dist., Bristol, Pa. Bids July 1. CD 6/25.

▲ **Blake Constr. Co.**, 33 E.S.W., Wash., D. C., CA $4,128,000, 6 story, brick, concrete, steel, block limestone EMPLOYMENT SECURITY BLDG. adjacent to new State Office, BALTIMORE, MD. Dpt. P. Imprvts., 506 Park Ave., Baltimore, Md. Bids July 10. CD 7/14, under LB.

SOUTH

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

August 8 Kentucky

STREETS AND ROADS

August 8 Kentucky

BUILDINGS—BA

+ **La., Alexandria**—THEATER—BA 8/12—U. S. Eng., P. O. Box 867, Little Rock, Ark., 10,000 sq. ft. masonry base theatre, England Air Force Base, Inv. No. 59-3. CD 7/21.

BUILDINGS—SLC

▲ **Ga., Brunswick**—PLANT—Best Wall Gypsum Co., Brunswick, soon lets contract gypsum products plant, Johnsen & Johnson, 11 W. Washington St., Chicago, Ill., archts.

HEAVY CONSTRUCTION—LB & CA

▲ **SOUTH CAROLINA**—State Hy. Dpt., Hotel Columbia, Columbia, Bids opened 7/15.

S. C.—**Dickerson, Inc.**, Monroe, N. C., LB $356,405 (4 bidders) wid'n. and b. conc. surf. 15.755 mi. State Rte. 3, F.A. Proj. DF-72 (2) and DF-204 (3), Barnwell Co.; LB $100,658 (2 bidders) bit. surf. 2.025 mi. Rd. 351; 1.395 mi. Rd. 327; 1.153 mi. Rd. 328; 2.825 mi. Rd. 323; 1.243 mi. Rd. 329; 1.683 mi. Rd. 330; 1.891 mi. Rd. 352; 1.581 mi. Rd. 331; 0.916 mi. Rd. 324; 0.501 mi. Rd. 325 and 0.546 mi. Rd. 356; 0.682 mi. Rd. 357, and 2.136 mi. Rds. 336 thru 346, F.A. Projs. S-1270 (1), S-1094 (1), S-1271 (1), S-1269 (1), S-1272 (1), S-1160 (1), S-1161 (1), S-1157 (2), and S-1158 (1), Chester Co.;

S. C.—**Green Constr. Co.**, Oaktown, Ind., LB $2,183,844 (9 bidders) grading, etc. 8.728 mi. Int. Rte. 26 for constr. 4 lane divided hy. from US Rte. 176 to Rte. 11. S.C. Docket No. 42.498. F.A. Proj. No. I-26-1 (6), Spartanburg Co.;

S. C.—**Clement Bros.**, Lenoir, N. C., LB $3,158,381 (8 bidders) grading, etc. 12.316 mi. Int. Rte. 26 for constr. 4 lane divided hy. from Road 49-Rte. 296. S.C. Docket No. 42.488. F.A. Proj. I-26-2 (26) (I-304-2 (26)). S.C. Docket No. 42.488. F.A. Proj. No. I-26-2 (26) (I-304-2 (26)), Spartanburg Co. CD 7/7.

▲ **J. A. Jones Constr. Co.**, 209 W. 4th St., Charlotte, N. C. CA $7,610,000. four general cargo berths, 2 warehouses, roads, racks and 1,800 ft. marginal dock, CHARLESTON, S. C. S. C. State Ports Auth., 1 Vendue Range, Charleston, S. C. Bids July 10. CD 7/15, under LB.

▲ **LOUISIANA**—State Hy. Dpt., Hy. Office Bldg., Baton Rouge,

T. L. **James & Co., Inc.**, Box 531, Ruston, La., CA $1,690,131, grading, drainage structures, overpass and interchange structures 0.652 mi. Sibley Rd. Interchange Rte. I-20, SP No. 740-00-20, FAP No. I-20-1(10) 1-540(10), Webster Parish. Bids June 25. CD 6/30, under LB.

▲ **Williams & McWilliams**, 833 Howard Ave., New Orleans, La., LB $1,408,703 (combined bid) (4 bidders) addnl. grain facilities (A) piling work (B) clearing concrete foundations, relocation work and electrical work control bldgs. (C) 8 welded steel grain tanks (D) twenty bolted steel grain tanks, Port Allen, BATON ROUGE, LA. Greater Baton Rouge Port Comn., 141 N. Jefferson, Port Allen, La. Bids July 17. CD 11/27.

▲† **McAlister-Davis Co.**, 1231 E. Raines Rd., Memphis, Tenn., CA $1,600,000, bank paving (revetments) at several locations between Wickliffe, Ky. and Memphis, Tenn. along Mississippi River, KENTUCKY and TENNESSEE. U. S. Eng., P. O. Box 97. Memphis 1, Tenn. Bids June 11. CD 5/13, under Kentucky, Missouri, Tennessee and Arkansas.

BUILDINGS—LB & CA

▲ **R. H. Pinnex**, Gastonia, N. C., CA $1,336,603, Albemarle HOSPITAL, ELIZABETH CITY, N. C. Pasquotank Co., Elizabeth, N. C. CD 6/19.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

August 12 Wisconsin

STREETS AND ROADS

August 5 Ohio August 12 Wisconsin

August 13 Michigan

▲ **O., Cleveland**—PARKING LOT—BA 8/28—City, City Hall, Zone 14, lease and construct, underground parking lot under Mall. $4,000,000-$5,000,000. Plans deposit $100. H. K. Ferguson Co., 1783 E. 11 St., Zone 11, engr. CD 4/23/57.

BUILDINGS—BA

▲† **Ill., Lemont**—TECHNOLOGY CENTER—BA 8/29—Atomic Energy Comn., Argonne National Laboratory, Bailey and Bluff Aves., superstructure Fuels Technology Center. CD 3/4/57, under CA.

HEAVY CONSTRUCTION—LB & CA

▲† **Fruin-Colnon Contrg Co.**, 1706 Olive St., St. Louis 3, Mo., CA $1,660,836 Nike installation with related facilities, adjacent to Hecker, ENG-11-032-58-95; CA $1,931,120 Nike installation with related facilities, Pere Marquette State Park adjacent to Grafton, ILLINOIS. U. S. Eng., 475 Merchandise Mart, Chicago 54, Ill. Grand total $5,288,844. Bids June 24. CD 5/20.

J. J. Altman & Co., 2950 Illinois Ave., East St. Louis, Ill. and **M. H. Wolfe, & Co.**, 2201 Adams St., Granite City, Ill. CA $1,696,888, Nike installations with related facilities adjacent to Marine, (Illinois).

BUILDINGS—LB & CA

▲ **Bruscino Constr. Co.**, 338 Nobottom Rd., Berea, O., Own Forces. $2,250,000. 150 prefabricated HOMES on 40-acre site on Walnut Dr., "Parknoll Estates", BEREA, O.

▲ **William Cafaro & Assocs.**, 1616 Covington St., Youngstown, O., Owner Builds. $1,500,000. SHOPPING CENTER, 30-acres in southern section of KOKOMO, IND. CD 8/30/56, under Donald Shanedling, as owner.

▲ **M. J. McGough Co.**, 1954 University Ave., St. Paul 4, Minn., CA Est. $7,000,000. 8 story HOSPITAL, along Lake Decatur, DECATUR, ILL. St. Mary's Hospital, 220 S. Webster St., Decatur, Ill. CD 10/31/46.

▲ **Jezo Constr. Co.**, 1909 S. 74 St., West Allis 14, Wis., CA $2,011,530, general contract HOSPITAL, WEST ALLIS, WIS. West Allis Memorial Hospital, c/o City Hospital Constr. Comn., West Allis, Wis. Grand total $3,415,547. Bids July 3. CD 7/14, under LB;

Dietz Electric Co., 264 E. Ogden St., Milwaukee 2, Wis., CA $709,000 electrical work for hospital (West Allis, Wis.);

Kuetemeyer Plumbing Co., 515 E. Wells St., Milwaukee 2, Wis., CA $705,017, heating work for hospital (West Allis, Wis.).

▲ **Sullivan-Smith, Inc.**, 22963 W. Outer Dr., Dearborn, Mich., Owner Builds. $7,000,000, constr. 368 APARTMENTS, Ford and Evergreen, DEARBORN, MICH.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

August 7, 8 Kansas

STREETS AND ROADS

August 7, 8 Kansas August 8 Minnesota

▲ **Minn., Duluth**—TRANSIT SHEDS, etc.—BA 8/12—Seaway Port Authority of Duluth, 909 Alworth Bldg., 251,000 sq. ft. transit sheds and warehouses. $2,000,000. Plans deposit $60. CD 8/8.

▲† **Montana**—BA About 10/16—U. S. Eng., Riverdale, N. D., powerhouse and switchyard for Fort Peck Second Power Plant, ENG-32-015-59-4. CD 9/5.

BUILDINGS—BA

▲ **Iowa, Waterloo**—HOSPITAL—BA About 8/7—Scholtz Memorial Hospital, Waterloo, 5 story, 60x150 ft. 80-bed hospital addn. and 2 story, 24x66 ft. hospital wing, Kimball Ave and East Ridgeway, $1,250,000. Frederick W. Mast & Assocs., 326 W. 18 St., archts. CD 7/29/57.

▲ **Tex., San Antonio**—HOUSING—BA 8/14—San Antonio Housing Auth., 400 Labor St., 183 unit

WELDED or RIVETED
STEEL PLATE
FABRICATION

- Boiler Casings
- Boiler Breechings
- Flues and Ducts
- Condenser Shells
- Condenser Piping
- Heavy Turbine Housings
- Fan and Blower Housings
- Dust Collector Housings
- Industrial Gas Mains
- Expansion Joints
- Hoppers and Bunkers
- Tanks and Vats
- Pressure Vessels
- Wind Tunnels
- Crane Bridge Girders
- Trolley Frames and Trucks
- Rigid Frames
- Roll-Over Fixtures
- Tank Turrets
- Gun Mounts
- Heavy Truck Bodies
- Engine Frames and Bases
- Crawler Frames
- Press Platens and Beds
- Press Columns
- Heavy Machinery Parts and Assemblies
- Gas Seal Hoods for Blast Furnaces
- Furnace Roof Rings
- Design Conversion of Castings to Weldments

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Branch Offices in New York and Chicago
MAHON

"Golden Age" Housing Center, in 9 story, bsmnt. bldg., Tex 6-18. $2,000,000. Extended date. Noonan, Thompson & Krocker, 2002 N. St. Marys, and Marmon & Mok Assocs., 613 S. Texas Bldg., archts.-engrs CD 7/15.

▲ **Minn., St. Paul**—HOSPITAL—BA 8/19—St. Joseph's Hospital, 69 West Exchange St., general constr., incl. mechanical and electrical, etc. John Gregory Murray unit to hospital; remove two wings, remodel N Wing and main structure; 5 story bsmnt. addn. $4,750,000. Plans deposit $100 on general. Ellerbe & Co., E. 505 First Natl. Bank Bldg., archts. CD 2/3/56.

▲ **Tex., Pasadena**—SCHOOL—BA 8/20—Pasadena Independent School Dist., Pasadena, 2nd unit of high school, South Houston, $1,500,000. Plans deposit $50. White & Emberg, 2017 S. Shepard St., Houston, archts CD 2/10.

HEAVY CONSTRUCTION—LB & CA

▲† **Fruin-Colnon Contg. Co.**, 1706 Olive St., St. Louis 3, Mo., CA $1,774,911, est. $1,500,000, NIKE installation with related facilities adjacent to Catawissa and Pacific, ENG-11-032-58-95, MISSOURI, U. S. Eng., 475 Merchandise Mart Bldg., Chicago 54, Ill. Bids June 24. CD 6/2.

▲† **Kenyon Constr. Co.**, Port Allen, La. CA $1,600,000. constr. Round Pond Interior Drainage Canal involving some 10 million cu. yd. earth excav. along St. Francis River in St. Francis Co., ARKANSAS, U. S. Eng., P. O. Box 97, Memphis 1, Tenn. Bids June 17, awarded June 25. CD 5/13.

▲ **TEXAS**—State Hy. Comn., Austin,
Tex.—Border Constr. Co. & Ross Walkers, P.O. Box 647, Laredo, Tex. CA $1,440,927, grading, etc. 11.931 mi. Hy. IH 35, Proj. I 35-2 (12) 70, LaSalle Co.;
Tex.—R. W. McKinney, P.O. Box 90, Nacogdoches, Tex. and **T. L. Jones**, Ruston, La. CA $1,763,763, concrete pavement, etc. 6.965 mi. Hy. IH 45, Proj. K-45-3 (14) 221, Navarro Co.;
Tex.—Killian-Hause Co., 4600 Broadway, San Antonio, Tex. CA $1,818,927, grading, etc. 5.073 mi. Hy. IH 35, Proj. I 35-2 (19) 145, Bexar Co. Grand total $5,023,618. Bids July 15, awarded July 18. CD 7/21, under LB.

▲† **H. B. Zachry Co., Constr. Div.**, Box 10188, San Antonio, Tex., CA $1,506,409 (2 bidders) runway cross-wind extension airfield lighting, Walker Air Force Base, ENG-29-005-58-146, ROSWELL, N. M., U. S. Eng., P. O. Box 1538, Albuquerque, N. M. Bids July 2. CD 7/18, under LB.

BUILDINGS—LB & CA

▲ **Maurice Mandel, Inc.**, 1014 Plymouth Ave., Minneapolis, Minn., CA $1,615,213, RESEARCH LABORATORY, Fort Snelling Area, FORT SNELLING, MINN. U. S. Govt., Bureau Mines, Contracting Officer, 2908 Colfax Ave., South, Minneapolis, Minn. Bids July 9. CD 7/14, under LB.

▲ **International Engineering Constr. Corp.**, 5903 Goforth St., Houston, Tex. CA $3,000,000 SHOPPING CENTER, 9th Ave. N. and 9th St., TEXAS CITY, TEX. Harbor Village Development Corp., J. C. French, Texas City, Tex. Wirtz, Calhoun, Tungate & Jackson, 2506 Richton, Houston, Tex., archts. CD 11/28/56, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES
August 20 California

STREETS AND ROADS
August 13, 20, 21 California

BUILDINGS—BA

▲ **Calif., Los Angeles**—FINE ARTS, etc.—BA 8/20—State Div. Architecture, 1100 Grand Ave., 3 story with 1 and 2 story wings, 109,000 sq. ft. floor area fine arts bldg., W. C. 4005GC-60. $1,982,000. Plans deposit $75, CD 7/25/57; 2 story 81,000 sq. ft. floor area music bldg. W. O. 4005GC-56. $1,840,000. Plans deposit $75, both at San Fernando Valley State College.

▲ **Calif., Riverside**—SCHOOL—BA 8/27—Riverside High School Dist., 3954 12th St., Arlington Junior High School. $2,000,000. Extended date. CD 7/21.

HEAVY CONSTRUCTION—LB & CA

▲ **IDAHO**—State Hy. Dpt., **Boise,**
Rogers Constr. Co., 11760 N.E. Glisan St., Portland, Ore. LB $1,616,087, roadway, plant mix bit. surf. 212 ft. concrete underpass and two 36 ft. concrete bridges 7.761 mi. Hy. N. 82 and 0.398 mi. Sebree connection, Elmore Co. Bids July 15. CD 6/26.

▲ **CALIFORNIA**—State Div. Hys., 1120 N St., Sacramento,
Guy F. Atkinson Co., 10 W. Orange Ave., South San Francisco, Calif. CA $1,647,722, grading, surf. 1.2 mi. 4 lane freeway US 101 south of Headlsburg and clearing and rough grading addnl. 3.7 mi. future freeway Rte to north, incl. bridges across Russian River and West Slough, Sonoma Co. Bids July 2, awarded July 17. CD 7/7, under LB.

▲ **CALIFORNIA**—State Div. Hys., 1120 N. St., Sacramento. Bids opened 7/23,
Gordon H. Ball, Gordon H. Ball, Inc. and Ball & Simpson, 685 Delaware St., Berkeley, Calif. LB $3,662,945 (5 bidders) grading, paving 2 mi. 6 lane freeway State Sign Rte. 24 between 0.3 mi. east of Orinda Hy. and 0.8 mi. east of Sunnybrook Dr. IV-C.C.-75A, Contra Costa Co. CD 6/25.

▲† **Utah Constr. Co., Paul Hardemann, Inc., and Manhattan Constr. Co.**, 100 Bush St., San Francisco, Calif. CA $5,985,231, (16 bidders) launch complex at Cooke Air Force Base, ENG-353-58-119, LOMPOC, CALIF., U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids July 17. CD 6/30.

▲ **American Pipe & Constr. Co.**, Box 3428, Terminal Annex, Los Angeles, Calif. LB $6,497,513 constr. 6 siphons, 7 mi. for Colorado River Aqueduct between San Jacinto and Vail Verde Tunnels and 6 siphons, 1½ mi. for the 2nd San Diego Aqueduct between Colorado River Aqueduct and Auld Valley in county of Riverside near Hemet, Spec. 558, LOS ANGELES, CALIF. Metropolitan Water Dist. of Southern California, 306 W. 3 St., Los Angeles, Calif. Bids July 17. CD 6/24.

BUILDINGS—LB & CA

▲ **Sound Constr. & Eng. Co.**, 1300 Alpha St., Seattle, Wash., LB $2,222,256 (11 bidders), general contract North Seattle HIGH SCHOOL, SEATTLE, WASH. School Dist. No. 1, 815 4 Ave. N., Seattle, Wash. Bids July 22. CD 6/18.

CANADA

HEAVY CONSTRUCTION—BA

CANADA

STATE HIGHWAY LETTINGS

BRIDGES
August 20 Ontario

STREETS AND ROADS
August 6 Ontario — August 21 British Columbia

BUILDINGS—BA

▲ **Que., Montreal**—HOUSING—BA 8/12—City, City Hall, housing, "Habitations Jeanne Mance", incl. four 12 story apartment buildings, incl. 107 dwelling units each; one 14 story apartment, incl. 108 dwelling units, central heating plant, heat distribution center $16,000,000. Greenspoon, Freedlander & Dunne and Jacques, M. Morin, 2165 Clifton Ave., Montreal, assoc. archts. Rother-Bland-Trudeau, 1552 St. Matthews St., Montreal, town planning consultant. CD 1/2/58.

▲ **Man., Portage la Prairie**—PLANT, etc.—BA 8/13—Campbell Soup Co. Ltd., 60 Bermingham Rd., New Toronto, Ont. (selected list of bidders) 1 story, no bsmnt., 300 x 400 ft. processing plant and office $5,000,000. Green, Blankstein, Russell & Assocs., 222 Osborne St. N., Winnipeg, archts. CD 11/22.

▲ **Ont., Brockville**—HOSPITAL—BA 8/14—Brockville General Hospital Bd. Governors, 6 story wing hospital, 3 story wing on east side and enlargement of nurses' residence to triple present size, $1,600,000 Drever & Smith 81 Brock St., Kingston, archts. CD 6/26/56.

HEAVY CONSTRUCTION—LB & CA

▲ **NEW BRUNSWICK**—Dpt. P. Wks., Parliament Bldgs., Fredericton,
Atlas Constr. Co., Ltd., Box 7, Fredericton, N. B. CA $1,314,000. 7 rein.-con. arch spans and completing 5 approach spans, Hartland Trans-Canada Hy. bridge over St. John River, Hartland. Bids July 3. CD 6/6.

▲ **Atlas Constr. Co. Ltd.**, 4781 St. Catherine St. W. Montreal, Que., CA $2,285,495, filter gallery at Montreal Waterworks, 3161 Blvd. Joseph, Verdun, MONTREAL, QUE. City, City Hall, Montreal, Que. Bids June 17, awarded July 18. CD 6/25, under LB.

BUILDINGS—LB & CA

▲ **Perini Ltd.**, 49 Jackes Ave., Toronto, Ont., CA $6,000,000. 12 story, penthouse, structural steel frame OFFICE, Richmond St. W., TORONTO, ONT. Sun Life Assurance Co. of Canada, Victoria and Adelaide Sts., Toronto, Ont. Bids June 17, awarded July 18. CD 5/19.

ALASKA

HEAVY CONSTRUCTION—LB & CA

▲ **DeLong Corp.**, 29 Broadway, New York, N. Y. CA $5,083,607. (6 bidders), 600 ft. dock and port facility, railroad trestle, fly. approaches, dredging 4 cranes, ANCHORAGE, ALASKA, City, City Hall, Anchorage, Alaska. Bids May 29. CD 6/4, under LB.
Washington Iron Wks., 1500 6 Ave. S., Seattle, Wash. CA $601,900. (8 bidders), 4 mobile cranes for port facilities, (ANCHORAGE, ALASKA).

▲ **A. V. Phillips Co.**, 4055 21 Ave. S., Seattle, Wash., CA $2,508,000. 90 ft. high dam from bedrock at outlet of Blue Lake, concrete headworks, 1,800 ft. long 12 ft. unlined tunnel for power and water supply, SITKA, ALASKA. City, City Hall, Sitka, Alaska. Bids Jan. 30. CD 2/6, under LB.

AMERICANS ABROAD

BUILDINGS—LB & CA

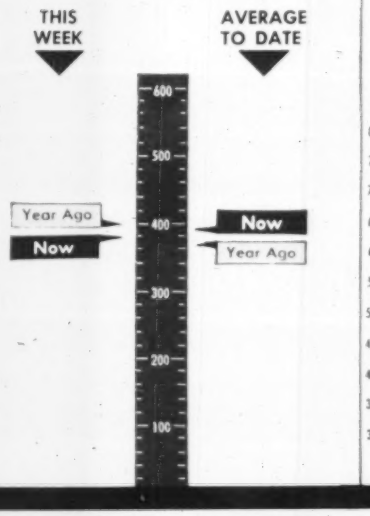
▲ **Gibbs & Hill, Inc.**, 461 8th Ave., Penn Station, New York, N. Y., CA design and construct THERMAL POWER STATION, Compostilla II, near Ponferrada, SPAIN. Total est. $27,600,000. Empresa Nacional de Electricidad, S. A., c/o Govt. of Spain, Madrid, Spain. (Correction—contractors' address). CD 7/1, under CA.

(Proposal Advertisement see pp. 79 to 81)

Construction Scoreboard

ACTIVITY THIS WEEK

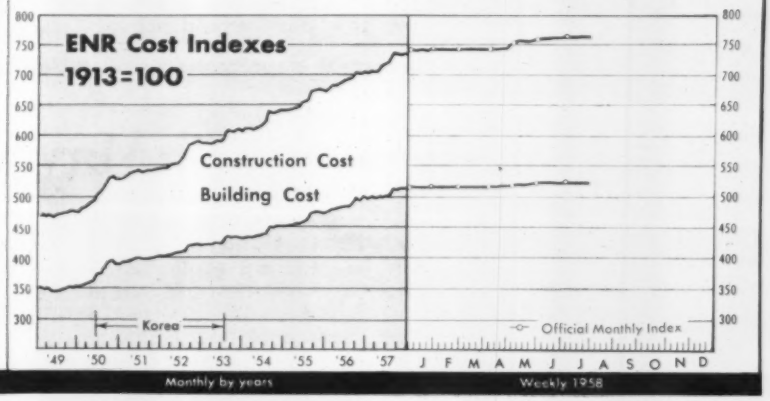
Contract Awards
Millions of Dollars



COST INDEXES AS OF NOW

ENR INDEXES (1913=100), 20-cities' average	Week of July 24 1958	% Change from June 26 1958	% Change from July 25 1957
Construction Cost	764.01	+0.5	+3.4
Building Cost	524.99	+0.2	+1.6

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850.
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518.



AMOUNT OF CONTRACTS LET

By Ownership	This Week	Cum. 31 wks 1958 millions	Chge '57-'58 %
All Heavy Constr.	$388.0	$12,229.9	+7
Private	165.4	5,114.0	−3
Public	222.6	7,115.9	+15
State & Municipal	169.8	5,030.0	+12
Federal	52.8	2,085.9	+24
By Type of Work			
Public			
Waterworks	6.4	199.2	−10
Sewerage	10.5	363.6	+7
Bridges*	8.3	424.9	−5
Highways	61.9	1,944.1	+1
Earthwork, Waterways	8.1	726.7	+8
Buildings, Excl. Housing	76.5	1,643.4	+11
Housing	4.6	861.6	+103
Unclassified	46.3	961.1	+25
Private			
Mass Housing	89.8	2,408.3	+30
Commercial	50.3	1,173.8	+8
Industrial	15.2	1,249.1	−38
Unclassified	10.1	274.1	−7

* Includes private bridges.

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

NEW CAPITAL FOR CONSTRUCTION

	Week of July 24	Cum. 30 wks 1958 millions	Chge '57-'58 %
Corporate Securities	$60.1	$3,369.0	−4
State and Municipal:			
All Except Housing	89.7	3,925.4	+25
Housing	...	33.8	−78
Federal Loans	...	110.1	−27
Federal Aid	...	....	−100
Total Nonfederal	$149.8	$7,438.3	−18
Federal Appropriations:			
Projects in U. S.	...	$849.5	+105
Outside U. S.	...	6.3	−72
Total New Capital	$149.8	$8,294.2	−13

BACKLOG OF PROPOSED HEAVY CONSTRUCTION

	June 1958 (millions)	Percent Change from last Month	Year
Total U. S. (ENR reported)	$111,958	−0.1	+ 4.6
By Ownership—			
Private	47,804	+0.5	+ 5.6
State & Municipal	50,759	−0.3	+ 4.7
Federal	13,395	−1.7	+ 1.0
By Type of Work—			
Waterworks	2,662	−0.2	+16.4
Sewerage	3,419	−0.8	+ 3.2
Bridges	3,399	−1.1	+ 9.6
Highways	13,286	−0.3	+ 2.2
Earthwork, Dams, Waterways	11,719	−1.1	+ 4.9
Public Buildings	19,978	+0.02	+ 1.3
Industrial Buildings	16,520	−0.5	+ 1.2
Commercial Buildings	21,399	+1.4	+10.0
Unclassified, Private	9,885*	+0.3	+ 4.2
Unclassified, Public	9,691	−1.8	+ 5.9

*Includes Private Bridges, $84 million.

FLOW OF NEW PROJECTS INTO THE BACKLOG

	1958 June	1958 6-months (millions)	Percent Change from '57 June	Year Cum.
Total U. S. (ENR reported)	$1,097	$8,150	−30.8	−20.3
By Ownership—				
Private	635	3,660	+36.5	−25.9
State & Municipal	420	3,886	−61.8	−18.6
Federal	42	604	+101.3	+19.8
By Type of Work—				
Waterworks	12	356	−58.2	+50.9
Sewerage	27	337	−53.9	+ 0.5
Bridges	10	250	−81.2	− 3.1
Highways	104	1,020	−68.4	−33.8
Earthwork, Dams, Waterways	1	129	−97.6	+24.3
Public Buildings	280	1,767	−39.8	−24.1
Industrial Buildings	91	680	− 0.5	−60.9
Commercial: Mass Housing	210	1,130	+46.3	−11.2
Other Building	275	1,646	+48.3	+10.7
Unclassified, Private	58	204*	+31.6	−54.1
Unclassified, Public	29	631	−81.1	+31.4

*Includes Private Bridges, $600,000.

FLOW OF PROJECTS OUT OF BACKLOG INTO CONTRACTS

Total U. S. (ENR reported)	$1,059	$5,190	+26.3	+ 6.0
By Ownership—				
Private	254	1,569	−16.6	−15.7
State and Municipal	539	2,698	+24.2	+18.4
Federal	266	923	+166.3	+22.2

IN 1928 it cost $50,000 to build plant "X".

TODAY it would cost $140,000 to replace.

BUT . . . a new plan would provide cash to make up the difference between normal depreciation and today's inflated replacement cost.

"Inflation Write-off" May Come to Life

A major change in the tax laws to bring depreciation allowances more in line with rising replacement costs is shaping up as a practical possibility. This would have enormous impact on the replacement market for old plant and equipment.

Opening wedge for an inflation allowance was supplied last week when the House passed a small-business tax relief bill. Major provision in the measure would allow a special 20% depreciation deduction on certain new equipment purchases. That device is limited in its application. It is designed as an incentive for small business rather than an offset for inflation (see next page).

However, the bill passed by the House bears a significant resemblance to a broader proposal advanced by a number of leading accountants.

This new proposal is embodied in House Bill 13289, introduced by Rep. Eugene J. Keogh of Brooklyn, N. Y. It would permit "reinvestment depreciation allowance" for tax purposes. The allowance would reflect the rise in costs between the time an investment was made and the time it is fully depreciated and ready for retirement. The allowance could be taken only if an equivalent investment were made in depreciable property within two years of the date of retirement. However, an identical replacement would not be necessary.

• **How it works**—Suppose a plant built in 1928 at a cost of $50,000 is fully depreciated and ready to be dismantled and replaced in 1958. ENR's Building Cost Index shows it would cost 180% more, or $140,000 to build this plant now. The taxpayer would be allowed to deduct $90,000 from his income this year, in addition to normal depreciation—if he invested at least $140,000 in new facilities. Then this $90,000 would be subtracted from the total cost to determine the normal depreciation he could take over the life of the new plant.

The author of this plan is Maurice E. Peloubet, senior partner of the accounting firm of Pogson, Peloubet & Co. of New York City. He emphasizes that it would not allow any more depreciation over the life of a facility than present practices. But, it would speed up the deduction to provide money for reinvestment at the time it is needed most.

• **Impact areas**—The impact of the proposal on the market for new construction would come in two ways: (1) The special deduction would ease the financing problems of companies faced with replacement needs. (2) The deduction could be taken only if actual investment in new facilities did take place, giving an incentive to spend the money on construction and equipment.

Mr. Peloubet's plan, now before the House Ways and Means Committee, would go only part way toward answering the demands of leaders in steel and other industries for depreciation based on current replacement costs. Total depreciation on any asset over its useful life would still be limited to its original cost.

It is significant that at the same time depreciation reform has been getting a sympathetic ear in Congress, there has been a growth of sentiment within the accounting profession for a new approach to depreciation accounting. Traditionally, most accountants have opposed reporting depreciation on the basis of replacement cost, either in tax returns or in reports to stockholders.

Most accountants have felt that the purpose of depreciation is to recover, in a systematic fashion, only the *original* cost of a building, machine or other depreciable asset. They have argued that depreciation was not intended, except incidentally, to provide funds for replacement when the asset wears out.

• **Profits overstated**—But critics of present depreciation practices say that in a time of chronic inflation, depreciation charges that don't cover replacement costs tend to understate a firm's full cost of doing business, and therefore understate its profits. As a result, the firm is reporting as income, that which actually is consumption of capital.

George Terborgh of the Machinery and Allied Products Institute has estimated that industry—by failing to make adequate deductions for depreciation—is paying income tax on something like $6 billion of capital consumption.

• **Support where it counts**—An increasing number of accountants are being won over to the idea that depreciation should be reported on a current, as well as historic, basis. The American Institute of Certified Public Accountants reports that a survey of business executives and teachers concerned with accounting showed 74% in favor of reporting "the current dollar cost of depreciation . . . in some appropriate manner in corporate reports to stockholders." In 1948 only 28% replied "yes" to a similar question.

This shift in opinion within the accounting profession is important because the opposition of most accountants to replacement cost reporting of depreciation has been one of the strongest barriers to a change in the law. If corporations appear to be asking for authorization to use in tax returns an accounting procedure they do not use in their own books, it looks merely like a plea for a special tax advantage.

Mr. Peloubet's "reinvestment depreciation allowance" or some similar plan, however, is still probably all that business can hope for in the near future because of the effect on federal tax revenues.

Even the modest 20% additional depreciation on the first $10,000 (or $20,000 if a joint return is filed) of investment proposed in the current small business tax reform bill is estimated to involve a revenue loss (or postponement) of $175 million.

House tax relief helpful but . . .

Senate Bill Is Even Sweeter

The Senate is moving toward a tax relief measure for small business more generous and comprehensive than one approved by the House last week.

The Senate proposal would provide a $10,000 first-year write-off on investment up to $30,000. The maximum charge-off would be reached on a graduated basis: a 50% write-off on the first $10,000 of investment, 30% on the next $10,000 and 20% on the final $10,000. The formula would apply to investment in plant, equipment and inventories.

• **House bill differs**—This measure allows only a 20% write-off on the first $10,000 of investment in operating equipment only, or on the first $20,000 if a joint husband-wife tax return is filed (see p. 72). Regular depreciation schedules would apply on the remaining 80% of investment and the normal first year write-off would be permitted along with the special allowance.

The Senate measure, however, will be the cause of squabble. The bill's backers are headed by Sen. John Sparkman (D.-Ala.), chairman of the Small Business Committee. He has 50 senators lined up in favor of the bill.

Passage of this bill will require House-Senate compromise action to bring any small-business relief measure into form for final passage and Presidential signature.

• **Help for all**—The House and Senate proposals would both apply to all businesses, regardless of size. However, they would provide more incentive for smaller firms of all types.

In addition to incentive, the bills will give tax relief by allowing a company to carry back a loss three years to secure a retroactive tax refund. The present law allows only a two-year carryback.

One result would permit a firm to charge off a loss this year against profits made back to 1955, instead of having to charge it off in a future year. The provision is especially appropriate this year when more companies are operating in the red.

• **House purpose**—The bill passed by the House has the broad objective of encouraging expansion of small business by making investment in such operations more attractive. It's tagged a "small business bill," but most of the benefits are available to large companies, and even farmers.

Other provisions of the bill would:

• Raise to $25,000 the present $1,000 limit on capital losses eligible for write-off as ordinary income loss. In the case of joint returns, the limit would be $50,000. Income losses often can be more advantageous when figuring the tax bill than capital stock losses. This provision, however, is limited to original investors in capital stock in a firm whose total stock offering does not exceed $500,000. In addition, equity capital and total stock combined could not exceed $1 million.

• Increase to $100,000 the present $60,000 ceiling on accumulated earnings withheld from distribution as dividends. This provision takes into account the rising costs of doing business since the $60,000 limit was imposed. Also, many small firms frequently need more than one year to determine their business needs.

• Extend to 10 years the period for payment of estate taxes in cases where the estate consists primarily of a closely held business. Present laws require that estate taxes be paid 15 months after the death of one of the owners.

To take advantage of this provision, the business must represent 35% of the gross estate or 50% of the taxable estate. Also, ownership of the deceased in the business must amount to 20% or more.

Failures Up 5% for Six Months

The number of bankruptcies among contractors during the first six months of this year totaled 1,132, a 5% rise over the same period last year. Liabilities showed a small decline of 2% below 1957 to $58.3 million.

During June, however, contractor failures dropped slightly—mostly for seasonal reasons. The total of 161 was the lowest for any month since July 1957. It also was below the June levels for the last two years when 164 and 163 bankruptcies were reported.

Building contractors again accounted for the six month rise; 456 general building contractors failed, an 8% hike over the same period last year. For building subcontractors, bankruptcies totaled 613, a climb of 4% over 1957. Liabilities of general building contractors dropped 3% and those of building subcontractors rose 8%.

In contrast to building group failures, the rate in other fields dropped 10% to 63. Liabilities were sliced even more —29% below last year's first half tally.

Contractors with liabilities of less than $100,000 bore the brunt of business reversal. Failures of contractors with liabilites under $25,000 rose 6% during the first half of this year; for those with liabilities between $25,000 and $99,999 the failure figure rose by 7%.

Contractor Failures by Type, Size, Region

(First six months—000 omitted)

	Number		%	Liabilities		%
	1958	1957	chg	1958	1957	chg
U. S. Total	1,132	1,079	+5	$58,309	$59,512	−2
BY TYPE OF CONTRACTOR						
General building contractor	456	422	+8	32,390	33,335	−3
Building subcontractor	613	587	+4	21,527	20,008	+8
Other contractors	63	70	−10	4,392	6,169	−29
BY SIZE OF LIABILITY						
Under $25,000	598	566	+6	6,502	6,525	−0.4
$25,000-$99,999	395	370	+7	18,785	17,415	+8
$100,000 and over	139	143	−3	33,022	35,572	−7
BY REGION						
New England	80	61	+31	4,033	2,000	+102
Middle Atlantic	286	238	+20	15,627	17,470	−11
South	173	160	+8	8,906	8,783	+1
Middle West	230	213	+8	13,073	10,261	+27
West of Mississippi	128	147	−13	4,947	8,096	−39
Far West	235	260	−10	11,723	12,902	−9

Data: Dunn & Bradstreet, Inc.

Omnibus Housing Bill Getting Larger

The House of Representatives gives every indication of being even more generous this year with federally supported housing construction than the Senate.

The House Banking Committee this week held hearings on a highly controversial omnibus housing bill approved last week by its subcommittee on housing. The subcommittee measure carries a price tag of $2.4 billion, but it could go even higher before the full committee is through.

The subcommittee, headed by Rep. Albert Rains (D.-Ala.), swept up most of the provisions included in a Senate-passed bill, then loaded it with a number of its own. The bill, as it now stands, is packed with so many features opposed by President Eisenhower that it is faced with a veto threat.

• **Home ownership easier**—The House legislation would greatly broaden the government's powers to promote housing and make it easier for people to buy a new house.

The Senate-passed version of the housing bill totaled $2.475 billion. It included $1.8 billion for urban renewal and slum clearance work over the next six years, or $300 million annually. The House subcommittee approved $1 billion for urban renewal work over the next two years, or $500 million each year. On paper the total represents a cut. However, it really can't be considered an $800 million reduction because further appropriations could be voted two years hence.

Also, the subcommittee made up this paper reduction elsewhere by providing an additional $725 million that could be used immediately. It increased by $500 million the special Presidential fund for the Federal National Mortgage Association (Fannie Mae) to purchase FHA and GI home mortgages. Congress earlier this year set up a $1 billion fund but this money may be expended by October. Additional funds were not included in the Senate measure.

• **Classrooms are included**—The subcommittee also approved $250 million in loans for college classrooms and other facilities—twice the amount agreed on in the Senate. The House group left untouched a $400 million authorization for college housing loans, but added $100 million in direct government loans for a new program of rental housing construction for elderly persons.

It also took steps to make it easier to finance new housing. Over vigorous Administration opposition, it would create a quasi-government board to insure the top 20% of conventional mortgages. This would have the effect of lowering down payments on such mortgages to 10%, instead of 20% or more. The provision was backed by savings & loan groups, but was broadened to include all lenders.

The bill also raised to $27,500 the present $20,000 limit on mortgages that can be insured by FHA, increased maximum term from 30 years to 35 years, and upped from $15,000 to 17,500 the ceiling on mortgages that can be purchased under Fannie Mae's special assistance programs.

The subcommittee did not include any funds for direct loans to veterans, but the full committee probably will insert $150 million for the purpose.

• **Public housing out**—The subcommittee killed a Senate provision to authorize construction of an additional 17,500 public housing units this fiscal year. The subcommittee took this step in an attempt to make its bill more acceptable to the House. The House traditionally fights public housing.

But this provision probably will be included in the final bill that passes Congress. The measure will have to go to a Senate-House conference, and Senate conferees probably will insist that all or part of the public housing authorizations be retained.

The housing subcommittee did agree to carry over for three more years the 55,000 units that already have been authorized but on which construction has not started.

Builders Asked to Ante Up

Chicago's expanding suburbs are having trouble raising money to build schools. The financial pinch is more noticeable now that a county circuit court has invalidated a Cook County community ordinance that required a homebuilder to pay $300 for each house he constructed. The funds collected were then held in reserve to help cover the cost of future school construction. Now school boards are leaning heavily on voluntary contributions from homebuilders, but it's not the best means of obtaining construction funds.

In the rapidly-expanding suburban communities, many school districts were short the bonding power to raise all the needed funds, although some bolstered their financing strength by raising assessed valuations on property. However, falling short of required funds, Park Ridge in Cook County, adopted the builder-levy ordinance in 1954. Other localities followed suit and patterned their laws on Park Ridge's. When the Cook County Circuit Court ruled that state laws do not empower Park Ridge to raise revenue by taxing homebuilders, similar measures in all of Cook County's communities automatically were eliminated.

The decision may serve to establish a precedent, too—a similar ordinance in Du Page County's Downers Grove is being challenged.

• **Coaxing the builders**—Raising money by persuasion is not easy, says the president of one district school board. Builders plan to erect more than 500 houses and 50 apartment buildings in his district. The existing school has six rooms and 165 pupils. Yet the only offer he has received is from a builder who will improve the school's sewage disposal system. The state's new $10 million revolving fund is no help, he says, because "by the time we can prove an emergency, it will be too late."

Cook County schools are better off, says Herbert Tobin, auditor for the county superintendent of schools. By increasing the assessed valuation of property, "many of our areas that were on the ragged edge have found they now have enough bonding power to meet building needs," he explains.

• **Some builders willing**—Some Chicago-area builders have shown readiness to share the school boards' burden. In Palatine, where 4,100 houses in 10 projects are slated for its school district, builders have donated money to a trust fund for later use.

In Sauk Village, in southern Cook County, two builders have agreed to provide schoolrooms as houses are put up. A district official sold them on the idea that homes would sell faster if school facilities were available.

Elsewhere in the country, some builder-solutions to the school problem have been offered. At the new Levittown in New Jersey, Builder William Levitt will build school facilities and give them to the community. (ENR June 12, p. 28). Fourteen homebuilders in Raritan Township, N. J., recently joined to provide schools costing $630,000. The community will get them free (ENR May 29, p. 84).

Makers Beware

Damages awarded buyer of defective materials

Michigan building materials manufacturers now are liable for defective products as the result of a State Supreme Court decision. The ruling overturned within the state a 116-year-old "general rule" of English and U. S. courts.

The case involved cinder blocks that started to "crack, chip, pit and explode into a series of minute craters," followed by flaking and discoloration soon after they were used in the building of a cottage.

The homeowner, Mrs. Helen W. Spence of Little Pleasant Lake, sued the manufacturer. But the suit for $5,000 damages against Three Rivers Builders and Masonry Supply, Inc., was dismissed in a County Circuit Court because of the "general rule" regarding manufacturers' liability.

In her appeal to the Supreme Court, Mrs. Spence contended she had at least an implied warranty on the building materials. The court agreed.

The majority opinion said, "The time has come for us to recognize that the asserted 'general rule' no longer exists. In principle, it was unsound. It tended to produce unjust results. It has been abandoned by the great weight of authority elsewhere."

The Court pointed out that many exceptions to the rule have been made, especially where medicine, drugs and other products that present consumers with a direct hazard are involved.

Three Rivers Builders and Masonry Supply, Inc. no longer manufactures blocks and no appeal is planned.

Ammonia Industry Needs Big Construction Program

The synthetic ammonia industry must spend $450 million for expansion by 1975 if it is to meet the swelling demands of agriculture and industry. This expansion would boost capacity by 80%.

These are conclusions of a report for security and investment analysts made by Ford, Bacon & Davis, New York City management and engineering consultants.

Total consumption of synthetic ammonia already is near the 10 billion lb annual productive capacity of the industry, the report shows. By 1975, predictable agricultural and industrial uses will require addition of 8 billion lb to annual capacity.

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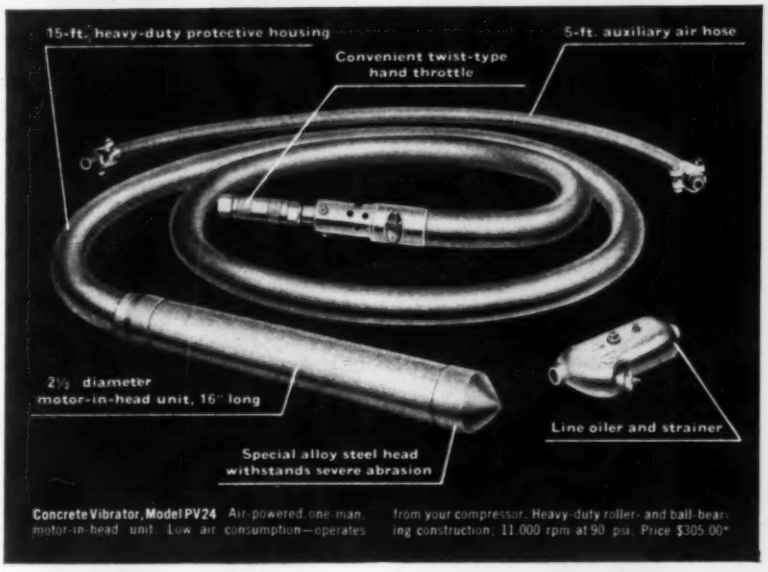
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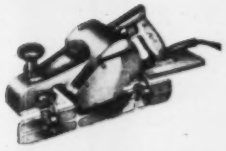
Concrete Vibrator, Model PV24 Air-powered, one-man, motor-in-head unit. Low air consumption—operates from your compressor. Heavy-duty roller- and ball-bearing construction; 11,000 rpm at 90 psi. Price $305.00*

Air circular saw, Model P128—12" blade. Husky 2½-hp motor safe from shock hazard around wet piers and wharfs. With case, blade and hose. **Price $345.00***

Generator Set, Model 3WAS—3,000 watts capacity, 25 amp. AC at 115 v.; 60-cycle; four take-off plugs. Reliable Wisconsin 8-hp engine. **Price $525.00***



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Labor Shapes Its Future Demands

The construction industry is building a rugged springboard for future wage demands. Long-term contracts are running strong. Deferred wage increases are hitting high.

Paradoxically, this is occurring in the face of the strongest employer resistance in many years—a resistance now reflected in multi-million-dollar strikes still in progress in Oregon, Washington and New York.

Contractors have been plugging for everything from wage freezes to cost-cutting labor codes and have had a host of crippling strikes. But in the end they seem to be the victims of their own relative prosperity and of the employer vulnerability peculiar to the industry.

• **The record**—Look at 21 of the recent contract settlements (outlined below):

Eleven of these will run for two years; six are for three years, two for four years and two for one year.

Current wage increases (payable this year) range from 5 to 30½ cents an hour (exclusive of fringe benefits)—19 of the contracts call for 10 cents or better, nine for 15 cents or more. This means nearly half the unions listed hit the 15 cent mark this year.

Of the long-term contracts, 18 provide for pay boosts of 10 cents an hour or more next year and 12 for 15 cents or better.

All third year increases are for 10 cents or more. And the fourth year increases in the two four-year contracts are for 15 and 20 cents.

As in the past, these deferred increases will tend to set a pattern for wage demands in the years ahead. And they are likely to impede any future efforts to get a voluntary wage freeze. That's precisely what happened last fall when union building trades' President Richard Gray unsuccessfully proposed a moratorium on 1958 pay boosts.

• **Strikes**—While these contracts were being hammered out, strikes by operating engineers, teamsters and iron workers were crippling parts of the industry from the Atlantic to the Pacific coasts. At the end of last week, the picture looked like this:

• Negotiations had broken down completely in an iron workers' strike covering all of upstate New York, except the Buffalo and Niagara Frontier areas. More than $150 million worth of construction was stalled—with schools heading the critical list. An estimated 20,000 members of other building trades unions were idled by the strike that began June 16.

Latest of the union demands (for six locals) included a 47½ cent wage package, plus costly travel, show-up time and foremen clauses, in a two-year contract.

Said Leon B. Kromer, Jr., managing director of the Albany Builders' Exchange: "These demands are far in excess of contract settlements with other building trades unions and are so unreasonable as to afford no basis for collective bargaining."

• Major construction projects worth over $450 million were at a standstill in Oregon and six counties of southwest Washington as the result of a strike of operating engineers. Federal mediator Leroy Smith could give no indication of prospects for settlement.

Major issues are wages (annual boosts of 10%, 8% and 8% in a three-year contract), hiring hall procedures and retroactivity of the 1958 wage increase.

• Erie, Pa., iron workers were continuing a strike that began June 18. Contractors say demands add up to $1.74 for in-town jobs, $2.13 for those who would rate travel pay.

• An iron workers' strike in eastern Pennsylvania, Delaware and New Jersey, in progress since June 30, was virtually settled. Union locals (structural) in Philadelphia and Easton were the only holdouts among 11 locals. Typical settlements call for a 45 cent wage boost over two years, with elimination of show-up time.

• A three-year contract with the Intermountain Chapter of Associated General Contractors ended an iron workers' strike that held up all major construction in Utah for more than two weeks. Union members (Local 27) get a 30 cent pay boost in three installments of 10 cents each.

. . . Here's a Rundown of New Settlements

Asbestos workers—Local 25 in Detroit settles for a **15 cent** wage increase in a **one-year contract**. New rate: $3.85.

Bricklayers in Dallas win **22½ cents** in a **two-year contract**—10 cents now (new rate: $3.87½), 7½ cents next January 1 and 5 cents July 1, 1959.

Carpenters—Local 227 in Lenawee County, Mich., ends a three-week strike with a **two-year contract** for **22 cents**. Members receive 12 cents now (new rate: $3.25) and 10 cents next year.

Cement masons—Local 514 in Detroit signs for a **two-year contract** calling for a **27 cent** wage boost—12 cents now and 15 cents next year.

Iron workers—Local 732 in Southern Idaho and Local 489 in Scranton, Pa., each accept a **30 cent** wage increase in **two-year contracts**—15 cents each year. This makes the new Idaho pay scale $3.37½ and Scranton's $4.30. Settlements in Camden, Wilmington, Atlantic City and Harrisburg are for a **45 cent** wage and fringe benefit package spread over **two years** and in Trenton for **42½ cents in a three-year contract**; reporting time is continued in Trenton but eliminated in the other areas. New scales range from $4.10 to $4.42½.

Plumbers and steamfitters—Local 146 in Fort Worth settles for **12½ cents** in a **two-year contract**—7½ cents now (new rate: $3.45) and 5 cents next January 1.

Roofers—Local 203 in Binghamton, N. Y., ends a three-day strike with a **30½ cent** wage increase in a **one-year contract**—25½ cents retroactive to June 1 (new rate $3.35) and 5 cents next January 1. Local 74 in Buffalo wins **65 cents** over a **four-year period**—10 cents as of July 7, 5 cents welfare October 1, 10 cents in wages and 5 cents in welfare next June 1, 5 cents December 1, 1959, 15 cents June 1, 1960 and 15 cents June 1, 1961. Buffalo rate now: $3.33.

Sheet metal workers—Local 162, Sacramento, Calif., gets **40 cents** in a **two-year contract**—17½ cents now (new rate: $3.62½) and 22½ cents next July 1. In Buffalo, Local 71 ends a month-long strike with a **four-year contract** that grants a **70 cent** wage boost. Pact calls for an immediate pay raise of 5 cents, 5 cents January 1, 25 cents next June 1, 15 cents June 1, 1960 and 20 cents June 1, 1961. Present rate now: $3.62½.

NLRB Will Invade No-Man's Land

More employers will be able to take labor disputes to the board under new rules effective this fall

Small contractors and craft union locals doing business in interstate commerce will soon be treated as first class citizens under federal labor law. Many are now denied the help of state courts and agencies because of the doctrine of federal supremacy. What's more they are unable to obtain federal protection or help in their labor problems.

The National Labor Relations Board decided last week to take on thousands of labor cases it had left untouched for the past four years because they weren't considered big enough. The decision was made after Congress gave the board a new $1.5 million appropriation to handle the extra work load.

Under a series of proposed changes in its jurisdictional rules, the NLRB plans to take on 20% of the untouched cases that fall into the no-man's land. That's the area declined by the federal board and outside the reach of state labor regulations.

The shift means these smaller cases —and contractors make up a good part of the group—will be accepted by the board for processing. The NLRB handles unfair labor practice cases and representation elections under Taft-Hartley regulations.

• **New rules**—The board's new jurisdictional limits will go into effect September 1. Employers and unions have until August 16 to submit briefs or comments on the proposed changes.

Basically, the new rules will enlarge the board's jurisdiction by lowering the dollar volume of interstate business that must be done to get a case before the board. The two changes affecting the construction industry are these:

• The dollar volume has been reduced to $50,000 a year. This includes work done outside the state, work done in the state but for someone in interstate commerce, materials bought outside the state and materials made outside the state but purchased within.

• All disputes having a "substantial" impact on national defense will qualify. Under the old rules, you had to be doing at least $100,000 worth of national defense work under contract.

The board left untouched its 1954 jurisdictional standard that says associations shall be regarded as single employers in NLRB cases. This means that single employers automatically meet the new requirements if the associations they belong to qualify under the standards.

• **The shift**—In announcing the changes in jurisdiction, the five-man labor board said it is relaxing its standards because of what the U. S. Supreme Court said in the Guss case—which virtually made the NLRB supreme arbiter of all labor disputes affecting interstate commerce.

The advice given by the court in the Guss case was this: Congress can change the situation if it wants to, or the NLRB can whittle down the no-man's land by more fully asserting its jurisdiction. (The only possible Taft-Hartley change now on the horizon is one contained in the still-pending Kennedy-Ives labor reform bill. It curbs the NLRB's right to refuse to handle cases.)

The shift to more cases, however, is not what the board really wants. It would prefer to see the states handle a number of cases now in no-man's land. It was the Eisenhower Administration board that tightened the jurisdictional rules in the first place, a reflection of the White House attitude on states' rights.

As the no-man's land of unregulated labor cases increased under the 1954 jurisdictional yardsticks, employers and unions have complained of operating without the aid or protection rightfully theirs under the law. With Congress stalling on a legislative solution and the pressure mounting, the NLRB finally accepted the Supreme Court's second suggestion.

But this is far from the end of the problem—for two reasons:

• The no-man's land will be up for full re-examination if Congress passes the controversial House-approved states' rights bill (H.R. 3). That bill allows the states to act in fields not specifically preempted by Congress.

• As long as the issue of federal versus states' rights remains in the field of labor relations, employer associations are likely to continue plugging for home rule.

Labor Reform Legislation Fades

House Labor Committee changes in the welfare fund bill may spell the end of broader Kennedy-Ives bill

A change in the wind on Capitol Hill is making employee welfare and pension fund disclosure—this year's target for federal labor legislation, instead of general labor reform.

The change occurred last week when the House Education and Labor Committee scrapped the Senate welfare and pension bill and came up with its own proposal—in the Teller bill. It makes internal dissemination the goldfish bowl for fund administration, instead of full-scale federal reports.

Possible consequences of the action are numerous. It may afford a slight chance of at least some labor legislation this year, but just about kills the broader labor reforms contained in the Kennedy-Ives bill (ENR July 10, p. 119).

• **Some dangers**—But even within the limited field of welfare and pension funds the road is full of obstructions.

There's a wide difference of opinion over the Senate and House approaches. The Senate, by a vote of 88 to 1, asked for federal control of employee funds through the Secretary of Labor with criminal penalties for false reports. The House committee eliminated the federal-control aspects and substituted direct reporting to beneficiaries with perfunctory filing of reports with the Secretary of Labor.

The House committee refused to exempt employer-administered funds from the disclosure requirements. This has aroused the ire of a number of business groups and adds to the probable hassle when the bill hits the House floor.

Whether the differences can be reconciled or not, further Senate action is necessary anyhow. And with Congress headed for an August adjournment, time is getting short.

• **Kennedy-Ives bill**—Where does this leave general labor reform legislation? It's probably lost in the mire.

(Continued on page 78)

TIMBER-CONCRETE Girder Bridge

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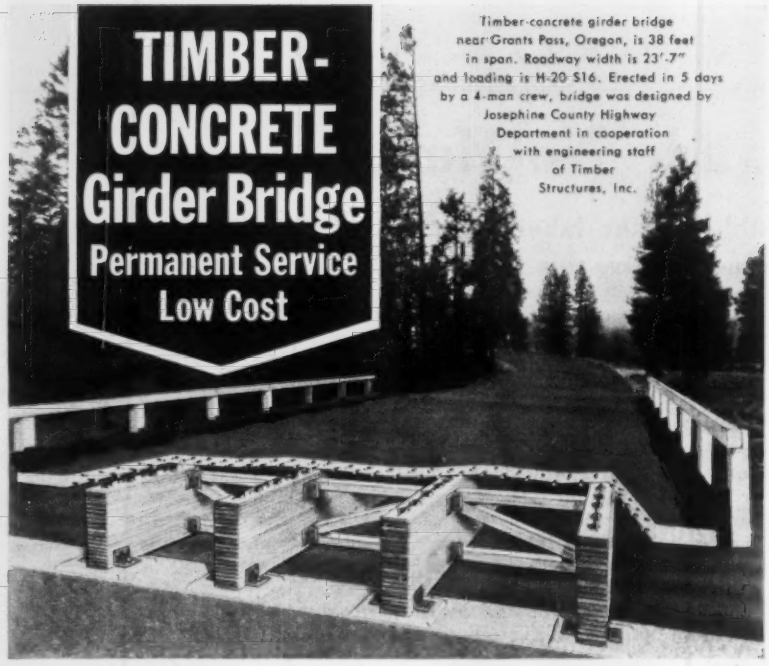

Timber-concrete girder bridge near Grants Pass, Oregon, is 38 feet in span. Roadway width is 23'-7" and loading is H-20 S16. Erected in 5 days by a 4-man crew, bridge was designed by Josephine County Highway Department in cooperation with engineering staff of Timber Structures, Inc.

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Heavy glulam girders made with waterproof glue and preservatively treated for permanent service are joined with specially engineered shear developers and tension ties to deck of reinforced concrete. Girders take the tension in the composite beam action of the bridge, and the concrete deck is the compression member. The bridge is permanently rigid, requiring no maintenance other than painting hand rails for appearance.

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The timber-concrete girder bridge is erected with a minimum of labor and equipment. Preservatively treated falsework which is supplied as part of the complete bridge "package" is installed entirely from the top, without shoring and scaffolding. It may be left in place or removed for re-use.

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The timber-concrete girder bridge may be designed for any loading from that of the farm access roads to the tremendous loads imposed by logging trucks, construction equipment, or main thoroughfare traffic. By governing the number, spacing and section size of the glulam girders, the roadway may be of any desired width. Widening may be done later by adding girders and deck sections.

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. . . Labor

Up until last week, the best prospects for labor reform centered on the Kennedy-Ives bill. This measure encompasses the whole area of union corruption—not just mishandling of welfare funds—by providing for stringent democratic rules for unions and their officers.

The measure has been sitting on the desk of House Speaker Sam Rayburn (D.-Tex.) who holds the whip hand on its future. Mr. Rayburn, as a normal course of action, would have sent it to the House committee. But this group's disposition to sit on labor legislation apparently was enough to keep him from following the routine. He's still holding on to the bill, and could, if he chose, attempt to put it directly to the House itself. But with the committee's welfare action, the chances are unlikely.

Labor legislation has enough political connotations to make a direct route just about impossible. Democratic leaders want a labor anti-racketeering bill, or at least a vote showing their concern, before the elections. If the welfare bill serves this purpose, the Kennedy-Ives measure may then be buried in the House Labor Committee.

Hits Pre-Hire Plan

Legalization of pre-hire contracts troubles NSPE

The pre-hire contract provisions of the Kennedy-Ives labor reform bill still before Congress (see p. 77) were severely criticized last week by the National Society of Professional Engineers.

In a letter sent to members of the House Education and Labor Committee, NSPE says the pre-hire proposal—which is a concession to the construction industry—threatens to sweep professional employees into heterogeneous construction unions and deny them the right to be covered by collective bargaining agreements of their own choice.

Effect of the pre-hire contract proposal is to authorize the execution of labor contracts covering present and future employees without first holding a certification election to determine the employees' choice of a collective bargaining representative.

NSPE says this nullifies the representation rights of professional employees. Under the law, they are entitled to a separate vote to determine whether they want to be included in a mixed professional and non-professional bargaining unit.

NSPE wants a public hearing on the Kennedy-Ives bill and a chance to get the proposal "deleted or appropriately amended so as not to impair the rights of professional employees."

OFFICIAL PROPOSALS

Bids: August 7, 1958

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, Canal Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 7th day of AUGUST, 1958, by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following Projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 2, L. KETCHUM, District Engineer, 109 No. Genesee Street, Utica 1, New York						
Montgomery	US 98	Lock 16 Erie Canal Near St. Johnsville	....	Furnishing & Installing 2 Lock Gates & Lowering Sills	5% of Bid Plans $10	Confidential
Oneida (Rte. 49)	FARC 58-98	Mohawk River Road Marcy, S.H. 296 Project DF DC 518(5)	2.27 (0.66 Acc.)	9" Cem. Conc. Pavt. 2 @ 24' Wide = 2.18 Mi. Asph. Conc. Ty. 1A = 0.66 Mi. Misc. Work = 0.09 Mi.	$70,000 Plans $5	$1,211,000
DISTRICT No. 3, E. E. TOWLSON, Acting District Engineer, 333 E. Washington Street, Syracuse, New York						
Onondaga	FIC 58-13	Interstate Route Connection No. 570 (City of Syracuse: State Fair Boulevard) Project I 1139(2)	1.25 (0.84 Acc.)	Electrical Lighting Facilities	$4,500 Plans $2	83,000
Oswego (Rtes. 11, 3, 126, 104, 49, 13	RC 58-92	Twenty Two Various State Highways in District No. 3	....	Roadside Development	$500 No Plans Prop. Only $2	9,000
DISTRICT No. 5, E. G. H. YOUNGMANN, District Engineer, State Office Bldg., 65 Court Street, Buffalo 2, New York						
Erie (Rte. 130)	FAGC 58-12	City of Buffalo: Broadway Arterial Highway (N.Y.C. R.R. & D.L. & W. R.R. Grade Separations Project UG 285(3)	0.39	9" Cem. Conc. Pavt. 2 @ 30' Wide R.R. Sep. I Beam 117.5' Variable R.R. Sep. Pl. Girder 92.5'	$128,000 Full Size Plans $50	2,335,000
Niagara	PSC 6607	Elimination of Grade Crossings of New York Central Railroad & The Erie Railroad With Roads & Streets in City of Niagara Falls	5.12 (0.94 Acc.)	R.R. Relocation = 5.12 Mi. Cem. Conc. Pavt. = 0.59 Mi. Asph. Conc. = 0.25 Mi. Grav. & Bit. Mac. = 0.10 Mi. 4 Hy. Sep. Pl. Gird. 115.7', 77.2', 112.8' & 149.8' 1 Reinf. Conc. Arch Br. 30'	$205,000 Plans $10	3,747,000
Niagara	FASS 58-8	Robinson Road Pt. 2, Co. Rd. 123 Project S 528(1)	1.02	Asph. Conc. = 0.94 Mi. Misc. Work = 0.08 Mi.	$11,000 Plans $2	192,000
DISTRICT No. 6, J. H. THOMAS, District Engineer, State Office Bldg., 30 West Main Street, Hornell, New York						
Steuben (Rte. 17)	TC 58-1	Corning Painted Post, S.H. 5026 (Centerville Road Intersection)	0.03	Traffic Signal	$600 Plans $2	10,000
DISTRICT No. 7, R. W. SWEET, District Engineer, 444 Van Duzee Street, Watertown, New York						
Jefferson (Rte. 12E)	FARC 58-103	Cape Vincent Watertown, Pt. 2, S.H. 1164 Project F 565(3)	1.51	Asph. Conc. Ty. 1A = 1.45 Mi. Misc. Work = 0.06 Mi. Comp. W. F. Beam Br. 507.8' Precast Conc. Beam Br. 32.2'	$60,000 Plans $5	1,120,000
DISTRICT No. 8, K. G. RAUER, District Engineer, Pleasant Valley Road, Poughkeepsie, New York						
Orange (Rte. 17)	FARC 58-94	Tuxedo Harriman Pt. 2, S.H. 8256 Central Valley Turners, S.H. 115 Project DF 405(8)	4.51	Asphalt Concrete	$25,000 Plans $2	458,000
Orange (Rte. 9W)	FARC 58-99	Balmville Newburgh, S.H. 1538 Newburgh Cedar Hill Cemetery, S.H. 5007 Project DF 357(10)	2.84	Asphalt Concrete	$9,300 Plans $2	168,000
Orange (Rte. 293)	FARC 58-95	West Point Central Valley S.H. 5328, 5328A, 5328B Project S DA	3.81	9" Cem. Conc. Pavt. 22' Wide = 3.67 Mi. Misc. Work = 0.14 Mi. Reinf. Conc. Arch Bridge 22'	$73,000 Full Size Plans $15	1,338,000
Orange, Ulster & Westchester (Rtes. 94, 17K, 9W, 312, 55, 212, 100, 22, 6)	RC 58-96	Br. No. 1 S.H. 154; Br. No. B 1 S.H. 576; Br. No. B 3 S.H. 8500; Br. No. B 1 S.H. 8536; Br. No. B 2 S.H. 8536; Br. No. 1 S.H. 602; Br. No. 2 S.H. 603; Br. No. 3 S.H. 1882; Br. No. 1 S.H. 1324; Br. No. B 2 S.H. 5298A; Br. No. 1 S.H. 3297	....	Cleaning & Painting 11 Bridges	$1,100 Plans $2	21,000
Westchester (Rte. 118)	FARC 58-97	Pines Bridge Yorktown Heights, S.H. 148 Yorktown Heights Putnam County Line, S.H. 149 Project DS 150(2)	0.94	9" Cem. Conc. Pavt. 24' Wide = 0.92 Mi. Misc. Work = 0.02 Mi.	$17,000 Plans $2	299,000
Westchester (Rtes. 9, 22, 120)	RC 58-100	Various State Highways on Route 9 (Yonkers to Croton River Bridge) Route 22 (Mount Vernon to Putnam County Line) and Route 120 (Purchase St. to Lake St.)	....	Roadside Development	$1,100 Plans $2	20,000
DISTRICT No. 9, JOSEPH C. FREDERICK, District Engineer, 71 Frederick Street, Binghamton, New York						
Broome (Rte. 7)	FARC 58-102	Tunnel, S.H. 266 Sanitaria Springs Harpursville, S.H. 5243 Project DF 496(12)	5.32	Asphalt Concrete	$65,000 Plans $3	1,205,000
Sullivan (Rte. 17)	FARC 58-104	Monticello Liberty Pt. 1, S.H. 5035 Monticello Liberty Pt. 2, S.H. 5322 Liberty County Line Pt. 1, S.H. 5223 Liberty Village, S.H. 5296 Project F 495(12), F 336(19)	8.11 (8.97 Sh.)	Bit. Mat. Treated Shoulders = 8.97 Mi. 9" Cem. Conc. Pavt. 2 @ 24' Var. Wide = 8.05 Mi. Misc. Work = 0.06 Mi. 2 Brs. Reinf. Conc. Boxes 32' & 26.5' 1 Br. Twin Corrug. Pl. Pipe Arch 23' 6 Hy. Sep. Comp. W.F. Beams 201.8', 130.5', 285', 232', 222' & 58.1'	$550,000 Full Size Plans $100	9,910,000
DISTRICT No. 10, M. E. GOUL, District Engineer, 325 W. Main Street, Babylon, L. I., New York						
Bronx	FICBE 58-4	Interstate Route Conn. No. 511 Cross Bronx Expressway (Cont. 5) (Walton Ave. to Clay Ave.) Project I 1084(32)	0.60	9" Cem. Conc. Pavt. With Carb. Black, Var. Wide = 0.47 Mi. Misc. Work = 0.13 Mi. (Access Rd. Pavt. = 19,300 S.Y. Sheet Asph. 4,800 S.Y. Cem. Conc. Pavt. & 400 S.Y. Granite Block Pavt.) 5 Hy. Sep. Steel Rigid Frames 122', 88.7', 100.7', 101' & 123.8' 1 Girder & Column Underpass 87' x 303.2' Long	$650,000 Plans $20	11,788,000
Kings	FIGE 58-1	Interstate Route Conn. No. 512 Gowanus Expressway, Cont. 1 (3rd Ave. 39th St. to 60th St.) Project I 1066(23)	1.05	Demolition of Buildings	$50,000 Plans $2	912,000
New York	FAHRD 58-2	Harlem River Drive (Cont. 141B: E. 133rd St. to E. 135th St.) Project DU 1133(1)	0.08	Reinf. Conc. Bulkhead Wall	$21,000 Full Size Plans $10	382,000
Suffolk (Rte. 25)	FARC 58-93	Port Jefferson Riverhead, Pt. 3, S.H. 8066 Project DF 83(10)	3.31	Asphalt Concrete	$19,000 Plans $2	350,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage) Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "Information for Bidders" in the Public Works Specifications, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Information for Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

OFFICIAL PROPOSALS

Bids: August 7, 1958

Project F-2-4 (6) Aguadilla By Pass Municipality of Aguadilla, P. R.

COMMONWEALTH OF PUERTO RICO
DEPARTMENT OF PUBLIC WORKS
BUREAU OF HIGHWAYS
ADVERTISEMENT
July 6, 1958

The Board of Awards of the Department of Public Works of Puerto Rico, 1507 Ponce de León Avenue, Santurce, Puerto Rico, will receive sealed proposals for the construction of 6.027 Kms. of Project F-2-4 (6) AGUADILLA BY PASS State Road No. 2, Municipality of Aguadilla, Puerto Rico.

Bidders shall submit their proposals at the office of the Board of Awards, 1507 Ponce de León Avenue, Santurce, Puerto Rico until 2:00 P. M. (Puerto Rico time) on August 7, 1958 at which time and place said proposals will be publicly opened and read aloud.

Principal items are 872,800 CuM unclassified excavation; 172,800 CuM selected borrow material; 35,100 CuM caliche base course; 65,000 SqM concrete pavement and 7,900 Tons dense graded hot plant mix, Class F, Type F-1, and two continuous reinforced concrete overpasses, over all length 0.050 miles.

Plans, specifications, instructions to bidders, and all necessary information may be obtained from the office of the Procurement and Contract Division, Department of Public Works, 1507 Ponce de Leon Avenue, Santurce, Puerto Rico upon a deposit of ONE HUNDRED ($100.00) DOLLARS in cash, money order or certified check payable to the Secretary of the Treasury of Puerto Rico until 96 hours prior to the opening of bids. The full amount of the deposit will be refunded to each depositor upon the return of the plans in good condition within (20) days after the opening of the bids.

Each proposal must be accompanied by a provisional bond in the amount of ONE HUNDRED FIFTY THOUSANDS ($150,000.00) DOLLARS in any of the terms indicated in the General Conditions.

The Board of Awards reserves the right to accept or reject any or all bids and to award contract under the conditions found most favorable to the Commonwealth of Puerto Rico.

Roberto Sanchez Vilella
Secretary of Public Works

Bids: August 7, 1958

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 7th day of AUGUST 1958, by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following Project(s):

County	Contract No.	Name
DISTRICT No. 8, K. G. RAVEN, District Engineer, Pleasant Valley Road, Poughkeepsie, New York		
Orange (Rte. 32)	FARC 58-55	Vails Gate Newburgh City Line, S.H. 9033 Proj. DF 532(12)

Miles	Type	Deposit	Estimated Cost of Work
2.99	9" Cem. Conc. Pavt. 24' Wide	$45,000 Plans $3	$830,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wages) Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "Information for Bidders" in the Public Works Specifications, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Information for Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: August 12, 1958.

Project U-26-1 (7) North Expressway State Road No. 26 (Villamil Street to Intersection No. 5 Section) Municipality of San Juan, Puerto Rico

COMMONWEALTH OF PUERTO RICO
DEPARTMENT OF PUBLIC WORKS
BUREAU OF HIGHWAYS
ADVERTISEMENT
July 6, 1958

The Board of Awards of the Department of Public Works of Puerto Rico, 1507 Ponce de León Avenue, Santurce, Puerto Rico, will receive sealed proposals for the construction of Project U-26-1 (7) NORTH EXPRESSWAY State Road No. 26, Municipality of San Juan, Puerto Rico.

Bidders shall submit their proposals at the office of the Board of Awards, 1507 Ponce de León Avenue, Santurce, Puerto Rico, until 2:00 P. M. (Puerto Rico time) on August 12, 1958, at which time and place said proposals will be publicly opened and read aloud.

The work to be performed is divided into two (2) parts.

Part I—Dry or Hydraulic Fill. Construction of an embankment with dry or hydraulic fill 0.695 Miles long and drainage structures.

Principal items for the dry fill are 134,725 cubic meters excavation of unsuitable material, and 328,970 cubic meters dry fill of which 128,000 CuM will be extra compacted.

Principal items for the hydraulic fill (Alternate for Dry Fill) are 387,900 cubic meters excavation of unsuitable material and 368,290 cubic meters of hydraulic fill.

Part II—Grading and drainage, approximate length 0.366 miles. Paving, 1.061 miles, of four lane divided expressway with frontage roads, including also the construction of an 18.00M reinforced concrete wharf, a 31.00M continuous reinforced concrete overpass and highway lighting.

Plans, specifications, instructions to bidders, and all necessary information may be obtained from the office of the Procurement and Contract Division, Department of Public Works, 1507 Ponce de León Avenue, Santurce, Puerto Rico, upon a deposit of EIGHTY ($80.00) DOLLARS in cash, money order or certified check payable to the Secretary of the Treasury of Puerto Rico until 96 hours prior to the opening of bids. The full amount of the deposit will be refunded to each depositor upon the return of the plans in good condition within twenty (20) days after the opening of bids.

Each proposal must be accompanied by a provisional bond in the amount set forth below in any of the forms indicated in the General Conditions.

Part I—Fifty thousand ($50,000.00) Dollars

Part II—Forty thousand ($40,000.00) Dollars

The Board of Awards reserves the right to accept any bid or to reject any or all bids and to award contract under the conditions found most favorable to the Commonwealth of Puerto Rico.

Roberto Sánchez Vilella
Secretary of Public Works

Bids: August 7, 1958

Contract M 58-9 for Cleaning and Painting Bridge E-2, Fourth St. Bridge in Waterford, Saratoga County, N. Y.

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Canal Law and Highway Law, sealed proposals will be received, until 10:30 A.M., D. S. T. on August 7, 1958 by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, the Governor Alfred E. Smith State Office Building, Albany, New York for:

Engineer's Estimate for M 58-9 is $5,700.00. Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 14th Floor, The Gov. Alfred E. Smith State Office Bldg., Albany, New York.
(b) Department of Public Works, 270 Broadway, New York City, New York.
(c) In addition to the above mentioned offices, plans, maps and specifications for Contract M 58-9 may be examined and obtained at the office of Mr. G. L. Nickerson, District Engineer, 333 Broadway, Albany, New York.

The deposit for Plans and Proposal Forms for Contract M 58-9 is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Proposals for M 58-9 must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" in the amount of $300.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Canal Law and the Highway Law as set forth in "Instructions to Bidders" in the contract specifications.

JOHN W. JOHNSON
SUPERINTENDENT OF PUBLIC WORKS

Bids: August 7, 1958.

Contract M 58-12 for Cleaning and Painting Six Canal Bridges in Niagara County, N. Y.

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Canal Law and Highway Law, sealed proposals will be received, until 10:30 A.M., D.S.T. on August 7, 1958 by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, the Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

Engineer's Estimate for M 58-12 is $18,000.00.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 14th Floor The Gov. Alfred E. Smith State Office Bldg., Albany, New York.
(b) Department of Public Works, 270 Broadway, New York City, New York.
(c) In addition to the above mentioned offices, plans, maps and specifications for Contract M 58-12 may be examined and obtained at the office of Mr. E. G. H. Youngmann, District Engineer, 65 Court Street, Buffalo 2, New York.

The deposit for Plans and Proposal Forms for Contract M 58-12 is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Proposals for M 58-12 must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" in the amount of $1,000.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Canal Law and Highway Law as set forth in "Instructions to Bidders" in the contract specifications.

JOHN W. JOHNSON
SUPERINTENDENT OF PUBLIC WORKS

OFFICIAL PROPOSALS

Bids: August 14, 1958

New Jersey Turnpike Authority

ADVERTISEMENT FOR PROPOSALS
CONTRACT NO. R-15

Proposals are invited for Contract No. R-15 which involves the construction of a median barrier and other incidental work in the median of the New Jersey Turnpike between Warwick Road at Mile 28.2 and a point North of Rancocas Creek Bridge at Mile 41.2, all in Camden and Burlington Counties, New Jersey.

The principal items of work include:

Galvanized or Painted Double Guard Rail ..... 65,000 lin. ft.
Concrete Median Barrier — Rancocas Creek ..... lump sum
Broken Stone Surfacing.... 24,000 sq. yds.
Pavement At Bridge Piers.... 600 sq. yds.

Proposals will be received at the New Jersey Turnpike Authority Administration Building, New Brunswick, New Jersey, until 11:00 o'clock, Eastern Daylight Saving Time, on the morning of August 14, 1958, at which time and place said proposals will be publicly opened and read.

Each bidder must submit a Contractor's Financial and Equipment Statement with his proposal.

Contract documents may be examined during office hours on or after July 24, 1958, at the office of the Authority and will be furnished upon payment of Ten Dollars ($10.00) for each set. Documents are not required to be returned and the payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Joseph Morecraft, Jr., Chairman

July 21, 1958

Bids: August 14, 1958.

Benjamin Franklin Bridge Contract No. 31-A-A

DELAWARE RIVER PORT AUTHORITY
of the
COMMONWEALTH OF PENNSYLVANIA
and the
STATE OF NEW JERSEY
Administration Building
Camden, New Jersey

Sealed bids will be received for the supply and erection of the Third Floor Annex to the Administration Building of the Benjamin Franklin Bridge, known as Contract No. 31-A-A, at the office of the Executive Director of the Delaware River Port Authority, Administration Building, Benjamin Franklin Bridge Plaza, Camden, New Jersey, until 2:30 P.M., Eastern Daylight Saving Time, Thursday, August 14, 1958, at which place and time they will be publicly opened and read by the Authority.

A more complete description of the work and full information for bidders are given in the Contract Documents and Specifications for this Contract, which may be obtained upon deposit of a $10.00 check, which will be remitted upon receipt of bid or the return in good condition of the copies so taken, within thirty days after the opening of bids.

Each proposal must be accompanied by a certified check in the sum of $5,000 payable to the Delaware River Port Authority and drawn upon a National or State Bank or Trust Company having an office or place of business either in Philadelphia, Pennsylvania or Camden, New Jersey, and must not be enclosed with the sealed bid. The surety's consent must be shown. The bidder to whom the contract is awarded will be required to furnish a Performance and Labor and Materialman's Bond in the sum of 100 percent.

The Authority will afford prospective bidders an opportunity to inspect the site of the Work.

The Authority reserves the right to waive any informalities in the bids received; to reject any or all bids, and to award the Contract only to those experienced in this class of work and to the bidder whose proposal is deemed by the Authority to be most advantageous to the public interest.

DELAWARE RIVER PORT AUTHORITY
JOSEPH K. COSTELLO
EXECUTIVE DIRECTOR

OFFICIAL PROPOSALS

Bids: August 19, 1958

Power Authority of the State of New York

ADVERTISEMENT FOR PROPOSALS
For the Furnishing and Delivery of
High Pressure Oil Pipe Type Cable
for
Niagara Power Project
Specifications No. PA-N-25021
Niagara Contract No. NP13

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW-YORK will receive sealed proposals for the furnishing and delivery thereof f.o.b. Niagara Switchyard Area, University Siding, Niagara Falls, New York, of high pressure oil pipe type cable circuits for the Niagara Power Project in Lewiston, Niagara County, New York, until 10:30 A.M. Eastern Daylight Saving Time on the 19th day of August, 1958, at the Authority's Office, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, at which time and place proposals will be publicly opened and read aloud.

Bids will be received for eighteen (18) circuits of high pressure oil pipe type cable in accordance with the bidding schedule.

Delivery of the high pressure oil type cable circuits will be required beginning on or before September 1, 1959.

Plans, Specifications and Proposal Forms for the work may be obtained from the Power Authority of the State of New York, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, upon application and prepayment of a fee of Twenty-five Dollars ($25.00) per initial set of contract documents, and Ten Dollars ($10.00) per set for additional sets, no part of which will be refunded. Plans, Specifications and Proposal Forms for the work will be on file in the Authority's Office and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and may be inspected by prospective bidders during office hours.

Bids must be made and returned in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than twenty (20) percent of the gross sum bid.

The right is reserved to reject any or all bids.

W. S. Chapin
General Manager

Bids: August 21, 1958.

Power Authority of the State of New York

ADVERTISEMENT FOR PROPOSALS
For the Furnishing and Delivery of
Draft Tube Pier Noses for
Lewiston Power Plant and
Tuscarora Power Plant
Specifications No. PA-N-24005
Niagara Contract No. NP10

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the furnishing and delivery thereof f.o.b. destination, of 13 sets of draft tube pier noses for the Lewiston Power Plant and 12 draft tube pier noses for the Tuscarora Power Plant in Lewiston, Niagara County, New York, until 10:30 A.M., Eastern Daylight Saving Time on the 21st day of August, 1958 at the Authority's Office, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, at which time and place proposals will be publicly opened and read aloud.

Bids will be entertained for welded structural steel draft tube pier noses with base pads, anchor bolts, and accessories. The work involves the fabrication of approximately 338 tons of metalwork. First delivery will be required beginning March 1, 1959.

Plans, Specifications and Proposal Forms for the work may be obtained from the Power Authority of the State of New York, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York upon application and prepayment of a fee of ten dollars ($10.00) per initial set of contract documents, and five dollars ($5.00) per set for additional sets, no part of which will be refunded. Plans, Specifications and Proposal Forms for the work will be on file in the Authority's Office and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and may be inspected by prospective bidders during office hours.

Bids must be made in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 20 percent of the maximum price bid.

The right is reserved to reject any or all bids.

W. S. Chapin
General Manager

Bids: August 14, 1958

Soil Explorations and Foundation Investigations

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 a.m. Advanced Eastern Standard Time on August 14, 1958, by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON RACQUETTE RIVER—HOGANSBURG, PT. 2, INDIAN RESERVATION—FORT COVINGTON, PT. 1, FRANKLIN COUNTY, WHICH CONSTITUTES CONTRACT SPEC. NO. SM-129.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, N. Y.
(b) Mr. Robert W. Sweet, District Engineer, New York State Department of Public Works, 444 Van Duzee Street, Watertown, New York.
(c) Mr. William M. Trainer, Associate Contract Engineer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50 percent of deposit.

The Engineer's Estimate of cost for this work is $9650.00.

Proposal for this contract must be submitted in separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $1,000.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders."

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPERINTENDENT OF
PUBLIC WORKS

Bids: October 21, 1958

Construction of a Beet Sugar Plant in Sulaimaniyah

GOVERNMENT OF IRAQ
DEVELOPMENT BOARD AND
MINISTRY OF DEVELOPMENT
CALL FOR TENDERS

The Development Board and the Ministry of Development of the Government of Iraq invite tenders for the supply, erection and supervision of operation of a complete beet Sugar Plant including the Civil Engineering work and the related Power Station, near Sulaimaniyah in Northern Iraq, with a daily capacity of 2000 (Two thousand) metric tons of Sugar Beets. The Contract Documents for this plant may be inspected from 21st July 1958 Until 21st October 1958 at the following address:

Address of Iraqi
Embassy Legation
or Consulate or any
other Departments concurred
For Example
The Royal Embassy of Iraq
21 Queen's Gate
London S. W. 7.

CORRECTION NOTICE
Construction Railroad Bridge
Wabash Railroad Company
The bid date caption over the ad as appeared in the July 10 & 17 issues was listed as Aug. 15, 1958 whereas the actual bid date is Aug. 5, 1958.
For complete information contact Chief Engineer,
WABASH RAILROAD CO.
1402 Railway Exchange Bldg., St. Louis, Mo.

EMPLOYMENT OPPORTUNITIES

NATIONAL COVERAGE

Send NEW Ads and Inquiries to Classified Advertising Division of ENGINEERING NEWS-RECORD, P. O. Box 12, N. Y. 36.
August 7th issue closes July 29th.

DISPLAYED RATE:
The advertising rate is $39.20 per inch for all advertising appearing on other than a contract basis. Frequency rates quoted on request.
An advertising inch is measured 7/8" vertically on a column—3 columns—30 inches to a page.
Subject to Agency Commission.

UNDISPLAYED RATE:
$2.40 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.
Position Wanted ads take ½ of above rate.
Box Numbers—count as 1 line.
Discount of 10% if full payment is made in advance for 4 consecutive insertions.
Not subject to Agency Commission.

ADDRESS BOX NO. REPLIES TO: Box No. Classified Adv. Div. of this publication. Send to office nearest you.
NEW YORK 36: P. O. BOX 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.

• POSITIONS VACANT

Highway Engineers—Highway Engineers with a minimum of 3 years experience. Excellent opportunity with established consulting engineering firm in Middle West. P-7909, Engineering News-Record.

Hydraulic Engineers—Civil Engineer Graduates— All grades, experienced in hydraulic design of channels and bridges and or design and construction of dams, for regulatory agency. Duties include review of plans and specifications, report writing, field investigations and inspections, with some travel and public relations. Salary depending on experience. Location—Harrisburg, Pennsylvania. P-8403 Engineering News-Record.

Wanted: Experienced concrete paving superintendent for contractor working predominantly in the Texas area. P-8395, Engineering News-Record.

County Engineer Wanted: Require registered engineer with highway experience. For more information contact Guthrie County Board of Supervisors, Guthrie Center, Iowa.

Manager for pre-stressed concrete producer. To take complete responsibility for sales, production, and engineering. Fine opportunity in new industry for man with leadership and resourcefulness. Qualifications: graduate engineer; age 28-40; construction industry experience; preferably some concrete design. Location: Middle West—Salary: open. Send complete resume. P-8424, Engineering News-Record.

Estimator — General Building Construction Northern Ohio area. Must be experienced with good reference. P-8444, Engineering News-Record.

Wanted—Civil Engineer with soil mechanics and construction background. Position involves extensive travel. Reply giving full details of background and experience. P-8459, Engineering News-Record.

Structural Steel Superintendent, experienced in complete charge of bridges and buildings. Location, Western Pennsylvania, Western New York. Must be willing to travel. Good opportunity for young progressive man. Furnish complete qualification resume. P-8510, Engineering News-Record.

Director of Public Works/City Engineer—Petaluma, Calif. (pop. 13,500). Calif. registration and three years municipal experience desirable. Salary range $641-$788. Apply City Manager, Room 2, City Hall, Petaluma, Calif.

Superintendent, Deep Sewer Work, Mid-Ohio Location. Furnish complete qualifications and experience. P-8480, Engineering News-Record.

Office Engineer—Heavy Construction background —must know excavation, concrete reinforcement, subcontracts and formwork, also concrete and structural design in connection with construction plant. Give full details covering education, experience, references, salary and personal data. Reply P. O. Box 296, Niagara Falls, New York.

Registered City Engineer wanted by City of Durango, Colorado. Excellent opportunity in growing City for experienced man. For further information contact Robert Peart, City Manager, Durango, Colorado.

Assistant Civil Engineer—Employment opportunity in Engineering Office of a growing Santa Clara County City. Salary Range $530-$644. Graduation from a curriculum in Civil Engineering accredited by the Engineers' Council for Professional Development; one year full-time work in some phase of civil engineering, preferably hydraulics. Paid vacation, sick leave, holidays, retirement system and other benefits. Apply Personnel Office, City Hall, Mountain View, California.

• POSITIONS VACANT

Engineer—Structural Steel Sales Promotion—we are searching for a young Civil Engineer, preferably under 30, to handle technical and promotional work with customers of the structural steel fabricating industry. Headquarters will be in our regional office at Philadelphia, Pennsylvania. Some travel through E. Penna., S. New Jersey, Maryland, and Delaware required. Applicants should have a B.S. in C.E. and preferably be registered. Experience in steel design and construction desirable. Salary open, depending upon experience. Insurance and retirement plans available. Send complete resume, recent photo if available, and salary requirements by mail to American Institute of Steel Construction, Inc. 101 Park Avenue, New York 17, New York.

General Superintendent for road job in Iran wanted. Must be capable of organizing job & must at least have twenty years experience in road construction. Also an Assistant-Superintendent and a Master Mechanic wanted. Apply P-8522, Engineering News-Record.

Construction Superintendent to take complete charge of underground pipe work for water and sewer installations for company situated in South Florida. Must be thoroughly experienced and capable of acting in an executive and administrative capacity responsible only to the president of company. Permanent position. State complete qualifications and salary desired in first letter. P-8541, Engineering News-Record.

Wanted—Experienced Bridge Design Engineer familiar with State Highway Department and Bureau of Public Roads Procedures for Over-All Checking of Bridge Plans and Related Work. Consoer, Townsend & Associates, Consulting Engineers, 360 E. Grand Avenue, Chicago 11, Illinois. Telephone: SUperior 7-7054.

General Superintendent—General Contractor with substantial volume throughout Michigan has opening for experienced young man to take charge of all field operations. State experience and references. P-8555, Engineering News-Record.

Electrical Utility Engineer, familiar with preparing property valuation reports. Consulting firm in St. Louis Area requires services of an experienced engineer in this field. Age and Salary requirements not limited. Complete qualification resume required. Public Utility Commission experience desirable, but not required. P-8553, Engineering News-Record.

Structural Steel Salesman wanted to represent large bridge fabricator in Northeastern States. Must be energetic and have a thorough knowledge of steel fabricating business. Apply: Pine Brook Iron Works, Inc., Mill Street, Dunmore, Penna.

• POSITIONS WANTED

Civil-Sanitary Engineer. B.S.C.E., MSCE. Reg. P.E., 4 years as Resident Engineer & Superintendent on water works construction. 2 years administration and preliminary design. Seek position with firm in above or related fields. Any location considered. PW-8420, Engineering News-Record.

Don't forget the

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When answering the classified advertisements in this magazine don't forget to put the box number on your envelope. It is our only means of identifying the advertisement you are answering.

• POSITIONS WANTED

Construction Executive 30 years experience in all phases of heavy and industrial construction, power plants, chemical plants, sewage plants, filtration plants, refinery installations, locks, dams, and tunnels. Interested in connection with aggressive contracting company doing competitive bidding and promotional sales work. Estimating and pricing accurate and construction methods current. Desirous of participating arrangement. PW-8423, Engineering News-Record.

Structural Engineer: BCE, PE: 26, single. Experience: 2 years Asst. IEO, USAF, 1 year instructor in accredited college, 2 years structural design, principally bridges. PW-8430, Engineering News-Record.

Supt. Const. 20 yrs. Institutional, Industrial, Commercial Engineer. Anywhere. PW-8457, Engineering News-Record.

Construction Man: 12 yrs. Supervisory experience General Construction, age 33. PW-8448, Engineering News-Record.

Registered highway engineer, land surveyor, 30 years experience. Engineer or construction superintendent, highways, bridges, sewers. PW-8429, Engineering News-Record.

Experienced Estimator, Project Mgr. and Construction Engineer. Registered Graduate Civil Engineer, Age 35, Available Now! PW-8225, Engineering News-Record.

Executive Assistant. Experienced Management Level construction administration including engineering, contracts, purchasing and personnel. Engineering degree. Age 36. PW-8504, Engineering News-Record.

Executive engineer, 33, married, citizen, civil graduate, multi lingual, extensive experience heavy construction, refinery construction, equipment sales assistant to VP engineering. Desires challenging position with future in San Francisco area, or abroad. PW-8468, Engineering News-Record.

Prestressed Concrete Manager. Do you need an experienced structural engineer well qualified to design plant facilities and products, who is capable of building and managing an efficient prestressed concrete plant? PW-8512, Engineering News-Record.

Project manager, negotiator, general superintendent, public relations. U. S. and foreign experience in general construction, mass housing, roads and utilities, material production. Available September 1. PW-8507, Engineering News-Record.

Superintendent of building construction seeks overseas assignment. 13 years experience as Engineer and Superintendent. Finishing large school project, available September. PW-8487, Engineering News-Record.

Professional Engineer and Land Surveyor, age 48, available immediately. Satisfactory domestic and foreign experience in construction, design, materials, maintenance, equipment, research and management of highways, structures, military and municipal facilities since graduation. Starting salary requirement is secondary to challenge; minimum of $600 per month. For detailed resume write W. L. Frederick, 3702 Hammersley Ave., Madison 5, Wisconsin, or phone Cedar 3-7769.

Construction Superintendent of Foreman. 18 years experience highway construction supervising heavy earth moving equipment—excavating, grading, and drainage. Prefer Midwest or Far West. E. A. White, P. O. Box 358, Mt. Holly Springs, Pennsylvania.

Construction Superintendent—general construction, age 46, 12 yrs. last employer, hold Carpenter's book. PW-8465, Engineering News-Record.

Construction Engineer-Manager. Reg. Civil, A.M. ASCE, attorney, member State bar, 34, 11 yrs. engr'g design & construction admin. Resume on request. PW-8473, Engineering News-Record.

• POSITIONS WANTED

Executive, thoroughly experienced all types of building and heavy construction, seeks contacts with General Contractors requiring top man to handle all phases of Contracting, bid to completion. Qualified to run a Large Project, Branch Office or a Business. Salary $20,000. PW-8450, Engineering News-Record.

Construction Controller — experienced finance and control multi-million dollar heavy construction projects. Thoroughly competent corporate accounting, reporting, costs, budgets, taxes, systems. Experienced all types contracts, corporate organizations, joint ventures. Knowledge French. PW-8447, Engineering News-Record.

Construction Supt. General Construction. PW-8340, Engineering News-Record.

Bilingual, French-English P.E., some Malay. German. Structural-Civil. U.S.C. 41. Military & Civil work 13 yr. design, 4 yr. field. Wide experience, sewers to cable-ways, buildings & prestress. U. S. Citizen. P.O. Box 607, Colorado Springs.

Designing Engineer, Age 47. 23 yrs. exp. Bridges. Ref. Concrete Str., Detailers. PW-8506. Engineering News-Record.

Civil Sanitary Grad. Eng. P.E. 33. Design. Construction. Specifications. Investigations. Prefer New York City or Vicinity. PW-8509, Engineering News-Record.

Construction Engineer: 42: Twenty years experience, domestic and foreign: Power plants, airports, highways, oil handling facilities, design and construction: currently completing several design projects for Department of Interior in Caribbean area. Interested in connection with consultant or contracting organization handling Latin American projects. Licensed C.E. several U. S. states and Puerto Rico. PW-8534, Engineering News-Record.

Construction Executive, thoroughly familiar with all phases of the construction industry. PW-8535, Engineering News-Record.

Graduate Civil Engineer with extensive administrative experience solicits difficult and or unpleasant position. Heavy construction, design, preliminary, or logistics. PW-8518, Engineering News-Record.

Project Manager or Superintendent for architect or contractor available. Recently completed luxury type 325 room El San Juan Hotel. Working knowledge Spanish and French. Also experienced heavy construction and housing. Age 44, single. Airmail replies to: Allen McSherry, P. O. Box 1215, San Juan, Puerto Rico.

Construction Executive, Civil Engineer. Experienced in road, pipeline, heavy and marine construction. Have good references. Foreign experience, speak several languages. Would be well qualified to manage branch office. PW-8537, Engineering News-Record.

BSCE-33-PE-Presently project engineer on municipal paving and sewage for consultant. Desire Midwest location with city or consultant. PW-8546, Engineering News-Record.

Want permanent position with small progressive Structural Steel fabricator in Southeast. Engineering background twenty years experience checking, detailing, layout, template. Good health and reference. PW-8543, Engineering News-Record.

Engineer—Over 15 yrs. exp. steel, concrete, and foundation design for oil refineries, railroads, bridges and buildings. Part or full time N. Y.-N. J. area. PW-8559, Engineering News-Record.

Construction manager or superintendent—twenty years experience power plants, pulp, steel and fuel plant construction. Foreign or domestic. Available immediately. PW-8558, Engineering News-Record.

Bridge Specialist and Department Supervisor desires new position offering challenge and opportunity. Can take charge of bridge project and train inexperienced group. Experience on 6 turnpikes and on freeways and interstate routes. All forms of short-span bridges including prestressed concrete, also long girders and trusses. Prefer north N. J. or N. Y. C. PW-8557, Engineering News-Record.

Accountant Office Manager experienced heavy construction NCR and IBM cost system and procedures. Go anywhere. PW-8556, Engineering News-Record.

Project Manager-Construction Superintendent. Multi Story heavy experience: apartments, hotels, hospitals, commercial. PW-8554, Engineering News-Record.

(Continued on page 84)

An employment advertisement in this EMPLOYMENT OPPORTUNITIES section will help you find the engineers you need. It's an inexpensive, time saving method of selecting competent personnel for every engineering job.

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P-8526, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

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P-8494, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

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P-8497, Engineering News Record
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• POSITIONS WANTED

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Structural Engineer, Age 35, P.E. with supervisory experience in design & const. seeks position in N.Y.C. PW-8563, Engineering News-Record.

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Man with 30 years experience as estimator and superintendent and once owned and operated own contracting business doing commercial buildings, schools and water filtration plants wants to represent out-of-state contractor doing business or desiring to do business in Alabama and adjoining states. Have also had considerable experience in government construction. RA-8551, Engineering News-Record.

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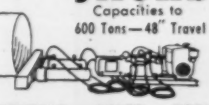

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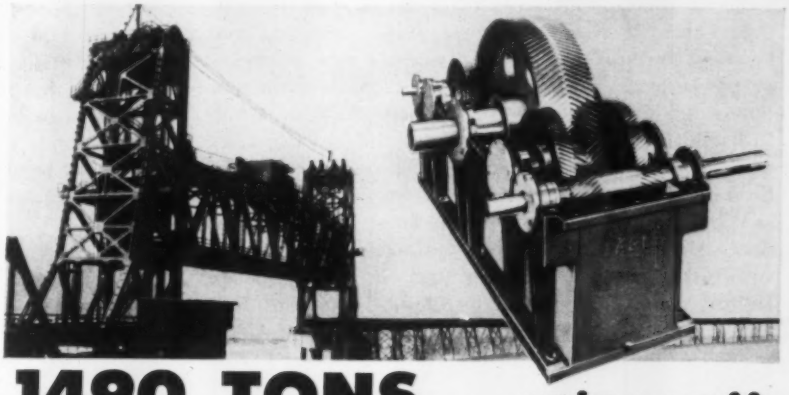

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Aswan to Baghdad and Beyond

THE CURRENT MIDDLE EAST CRISIS has construction as one of its causes, and construction will occupy a prominent place in any solution that may be worked out. Sometimes our foreign policy takes note of these facts, but sometimes, too, the persuasive role that construction can play has been overlooked or rejected. Events of the past two years suggest that this role be re-evaluated in the light of what construction can do to assure peace in the Middle East (see story on p. 21).

It was just two years ago this month that the U.S. withdrew its offer to aid in the financing of Egypt's proposed Aswan Dam. It would be a gross oversimplification of a very complex situation to say that this action was the fuse that set Arab nationalism in motion. But it was, nevertheless, the immediate antecedent to the tragic chain of events surrounding the Suez Canal. And it was these events that catapulted Egyptian President Nasser into the position of high priest of Pan Arabism. It is largely due to his actions since that the present crisis has developed.

Construction, too, was in the forefront when the Suez Canal was restored to service. And it was a question of construction that caused Syria to turn to the Soviet Union when we procrastinated with aid or encouragement for some of her dam, road and railroad projects.

In Lebanon, where U.S. forces now maintain a controversial bivouac, and in Iraq, where a new regime is in power after a cruelly executed coup, construction dominated both public and private life. So from Aswan to Baghdad there was no time during the past two years when construction did not occupy a prominent place in the events that occurred.

What of the future beyond the latest event in Baghdad? All signs point to the continued importance of construction as a controlling force in developments. In this connection it is tremendously significant that almost the first public statement coming from the new regime in Iraq was an assurance that the technical operations of its Western-oriented Development Board would not be interrupted, and that all design and construction contracts would be honored. And this was accompanied by a plea to please continue to buy their oil, so that the construction in their development program could continue without interpretation.

There is a lesson in these repeated instances of the importance of construction to the Arab peoples: Some way, somehow, we must adjust our foreign policy as it relates to them to take advantage of their yearning for construction and the raised standards of living that it provides. This adjustment need not and should not require great increases in the amount of foreign aid funds that we furnish. But it should entail a revamping of the methods by which the funds are made available and re-emphasis of our vital interest in the Arab countries, their development, welfare and aspirations for some kind of national unity.

We might make low-interest loans instead of grants, where possible; or encourage private industry to invest, by guarantees against loss if necessary, as Britain, France and West Germany already do. We certainly should set up a foreign aid organization that can make decisions quickly and deliver on commitments promptly—even perhaps give it some of the freedom from strict cost accounting that the Atomic Energy Commission enjoys.

And if other, still more unorthodox, measures offer a chance of success, they too would be worth trying. For the Soviet economic penetration into the Middle East is too menacing to trifle with.

Construction should be an arm of our foreign policy to a far greater extent in the future than it has been in the past. And in the Middle East, where construction is so badly needed and wanted, a foreign policy based on it would be popular. Properly implemented and propagandized, it could also be made more acceptable than a similar Soviet policy—since we have a demonstrable economic interest in raising Arab living standards while Russia does not. She has too many irons in the fire for her own development at home to bother about the fate of the Arab peoples for many years to come.

Aiding the Middle Eastern countries through construction is the best way to counter Nasser's personally-oriented brand of Arab nationalism. The raised living standards that would result would offer a firm base for the Arabs to build on and achieve whatever degree of national unity they themselves desire. If such a program can be set in motion, the road beyond Baghdad will be smoother for everyone.

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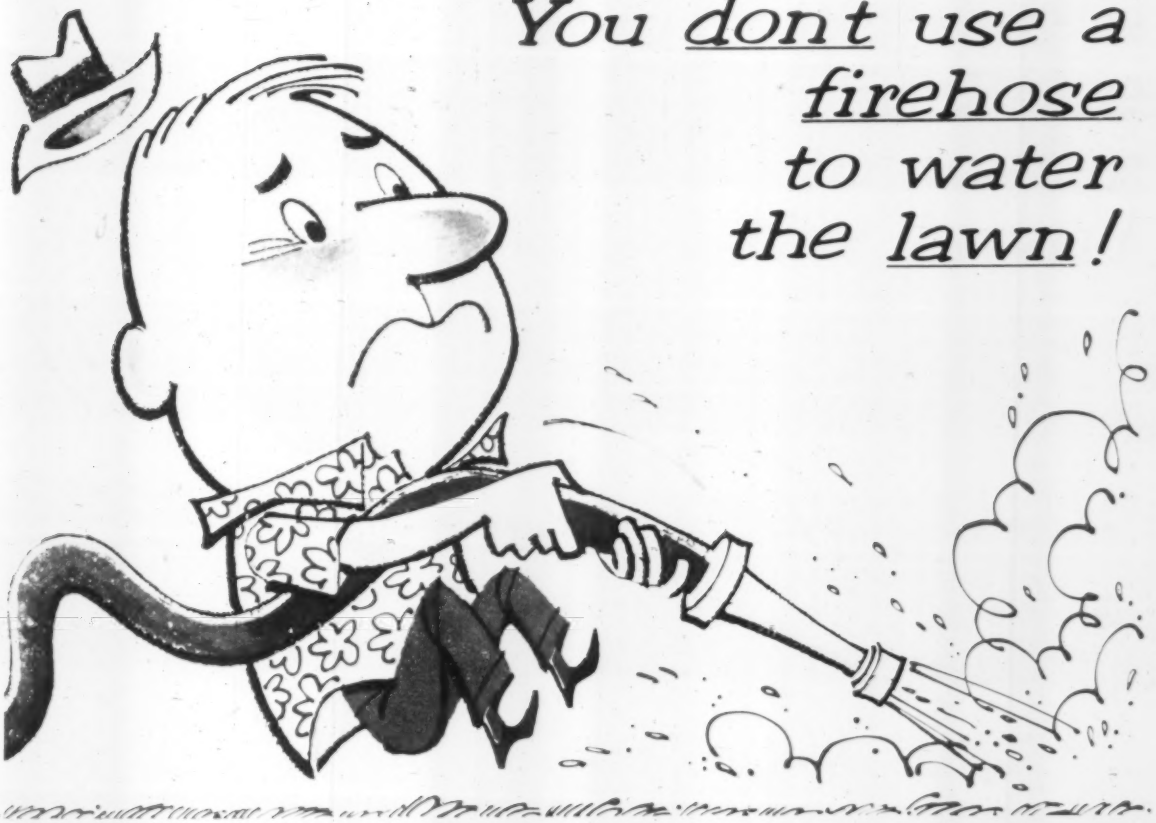
It is possible that by focusing the code on one single type of building some of the troubles that have beset some other codes may be avoided. This approach is at least worth trying to see if such a specialist code will fare any better in securing adoption at the local level than some of older and broader state and national codes. Its prospects are brighter since it should be easy to obtain public support for its adoption.

If there is an enthusiastic response to the invitations sent out by the American Standards Association to a conference on the proposed code, September 9, a good start will have been made in a worthy cause.



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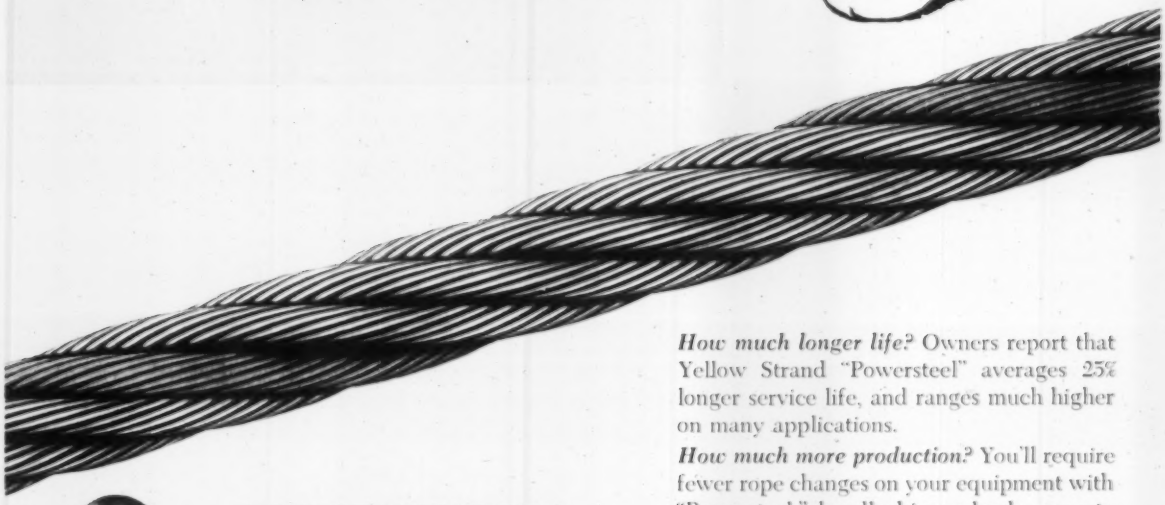

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